

The Chemical Age

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NOTICES:—*All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.*

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Chilean Nitrate Prospects

MUCH has been heard of late of the improved condition of the Chilean nitrate industry, and now comes the announcement that the Government of Chile has arranged a scheme for the centralisation of selling—a scheme that may in some respects perform the same functions as those which Nitram, Ltd., performs in connection with sulphate of ammonia. Representatives of all the leading firms producing and importing nitrate have been invited to join a directorate in London which is to be invested with directional powers concerning sales on this side, and will take over stocks of nitrate and supervise future shipments. September is the date suggested for the introduction of this plan, but in view of the many details involved it may be found desirable to defer its operation for fuller consideration. What the proposal makes clear is that the Chilean Government has recognised the serious threat to the national industry presented by synthetic producers, and is taking vigorous steps to protect its interests. The competition in the fertiliser industry promises to grow rather than to decline—although with two authorised selling organisations in existence, some policy of limitation may yet be

adopted—but the natural nitrate industry, judged by the success of the past few months, is obviously still a long way from extinction.

From the announcement in our market pages to-day of the new sulphate of ammonia prices for home consumption for the season 1928-29, it will be seen that, starting at £10 for August, the price undergoes a slight monthly advance until it reaches £10 13s. in May-June of next year. Sulphate supplied on these terms is reserved strictly for home agricultural use, and unauthorised export is covered by certain penal clauses in the agreement. In recent years the price of sulphate has declined considerably, and it will be interesting to see whether the effort to give an upward turn to the curve will succeed. The prices quoted for the season 1928-29 relate, of course, to sulphate of neutral quality, with a guaranteed nitrogen content. The output of ordinary quality sulphate—that is, not freed from acid—has so far declined that Nitram, Ltd., refrain from quoting a price for it.

The Chemical Engineers' Tour

WE learn from our American friends that the arrangements for the chemical engineers' tour to Canada and the United States in August are quite completed, and that they are looking forward with interest to the arrival of the largest chemical overseas party that has ever been organised. On this side, too, the organisation is complete, with the exception that several who go out with the party on the White Star Line may choose to make the return passage on the Cunard Line, which is offering facilities both from New York and Boston. It seems necessary to emphasise the fact that the tour is being organised by the chemical engineering organisations of Great Britain and America, for already the gossipers of Fleet Street are informing the world, quite mistakenly, that the 150 tourists are a Society of Chemical Industry party for the annual meeting in New York. It seems a pity that misconceptions of this kind should be deliberately put in circulation.

To make the position clear, it may be recalled that the American chemical engineers spent a very pleasant holiday tour here some two years ago. The present joint meeting and industrial tour of Eastern Canada and the United States is, in the words of the official programme, "by invitation of the American Institute of Chemical Engineers to the (British) Institution of Chemical Engineers, in which the Society of Chemical Industry is also invited to participate." The chemical engineers, on their fortnight's tour from Quebec to New York, will have with them Sir Alexander Gibb, their president, and Professor Hinchley, their secretary, and other prominent members, but the members have learned with general regret that Mr. Harold Talbot, the

chairman of the Chemical Engineering Group, will be unable to make the tour, on account of important business that detains him in England. A large number of members of the Society of Chemical Industry have accepted the invitation to join the tour, and it is satisfactory to learn that Mr. F. H. Carr, the president, and Professor Jocelyn Thorpe, the president of the Chemical Society, will accompany the party throughout. The chemical engineers' programme ends on Sunday, September 2, at Washington, and the remaining week in New York will be given up to the annual meeting of the Society of Chemical Industry (at which Mr. Carr will deliver his presidential address) and a round of social and industrial visits. The arrangements for this final week are in the hands of the American Section of the Society, which, of course, must not be confused with the American Chemical Society, with its 17,000 members, whose annual meetings begin at Swampscott the following week.

Emphasis has been placed on the large proportion of comparatively young men who are accompanying the party with the idea of closely studying "the new industrial science of America." It may, on this point, be well to offer a hint that, although American firms pursue a very open policy in welcoming guests to their works, they receive them as friendly visitors and not as an organised mission of inquiry into their methods and processes.

More Cartel Rumours

THERE has recently been registered in Basle, Switzerland, a company known as the Internationale Gesellschaft für Chemische Unternehmungen A.-G., having a capital of 20 million francs. It seems that this company is simply a subsidiary of the I.G., but exact reasons for its formation are at present not clear. The news of its inception has, however, given rise to some remarkable rumours, suggesting that a Continental cartel of chemical manufacturers (involving Germany, France, Switzerland and Italy) was being formed. No evidence for this is forthcoming, but in America the rumours have been the subject of much comment. It is considered that such a move, led, presumably, by the I.G., would be the natural retort to the recent formation of the Finance Company of Great Britain and America. It is freely assumed in the United States that the formation of the latter company is an indication of a general chemical alliance between Great Britain and the United States, and that a Continental chemical trust will be formed in Europe among the non-British producers to offset this alliance. How far this is true remains to be seen, though in some matters (such, for example, as synthetic fertilisers) it seems most unlikely that unrestricted competition between the British and German products is to be the order of the day. It is, however, interesting that the suggestion of a grouping involving Great Britain and the United States on the one side, and the European Continental countries on the other, should come from the United States; for it is only a short time since the fear of a chemical alliance between Britain and Germany was the pet bogey of the Americans.

A Bad Policy

At the annual meeting of "L. and N." Coal Distillation, Ltd., Mr. Frank Hodges, who has lately become a high scientific authority on coal treatment, made one suggestion that will strike many people as thoroughly bad. His suggestion was that, in view of the substantial progress made by the company, the Government, if it wished to do something really useful and fundamentally lasting for the coal industry, should put "a few millions" at the disposal of the industry to be used exclusively in the erection of plants for low-temperature distillation, leaving it to the collieries and the distillation companies to effect the commercialisation of these processes if necessary. This suggestion assumes that the low-temperature carbonisation process is finally out of the experimental stage, and that all that remains is its effective commercialisation.

A good many students of the coal problem will consider Mr. Hodges to have been too easily convinced, and will by no means accept his view that the way is as easy as he thinks. In any case, we imagine, the high-temperature distillation interests would have something to say about the subsidising of one form of distillation to the disadvantage of another, and the expenditure of public money on the promotion of private commercial adventures, however excellent the latter may be. The chairman of the company (Colonel Moore-Brabazon, M.P.), did not betray any enthusiasm for the suggestion, nor will it excite much enthusiasm in other quarters.

The Welsbach Merger

FROM the chairman's statement at the annual general meeting of the Welsbach Light Co., there appears to be every prospect of the offer by Imperial Chemical Industries being accepted by the holders of the necessary 76 per cent. of the share capital. It would be difficult indeed to imagine any grounds on which so good an offer could be refused. The terms themselves are distinctly favourable to the existing shareholders. What is even more important is that the scheme provides for a considerable advance towards the unification that the gas lighting trade needs. The directors of the Welsbach company have strongly recommended the acceptance of the offer, and within a short time one may confidently expect an announcement that the necessary proportion of acceptances has been received.

Books Received

- DRY-ROT IN WOOD. Department of Scientific and Industrial Research. Forest Products Research Bulletin, No. 1. London: H.M. Stationery Office. Pp. 24. 1s. 6d.
- THE SALES ENGINEER. SOME COMMERCIAL ASPECTS OF METALLURGICAL AND CHEMICAL ENGINEERING. By Gilbert Rigg. London: Mining Publications, Ltd. Pp. 112. 10s.
- LIBRARY CATALOGUE. The Research Association of the British Rubber and Tyre Manufacturers. Pp. 210.
- TECHNICAL METHODS OF CHEMICAL ANALYSIS. By G. Lunge and C. A. Keane. Second Edition. Edited by Charles A. Keane, D.Sc., Ph.D., and P. C. L. Thorne, M.A., M.Sc., Ph.D. Volume II. London: Gurney and Jackson. Pp. 644. £3 3s.

The Calendar

Sep.		
3-7	Society of Chemical Industry: Annual General Meeting.	New York, U.S.A.
5-12	British Association Meeting.	Glasgow.

A Notable Resignation : Dr. E. F. Armstrong, F.R.S.



THE ANNOUNCEMENT OF THE RESIGNATION OF DR. E. F. ARMSTRONG, MADE IN "THE CHEMICAL AGE" OF LAST WEEK, IS NOW OFFICIALLY CONFIRMED. WE ARE INFORMED BY IMPERIAL CHEMICAL INDUSTRIES THAT DR. ARMSTRONG, HAVING RESIGNED HIS POSITION AS A DIRECTOR IN THE BRITISH DYESTUFFS CORPORATION, HAS ACCEPTED A RETAINER AS CONSULTANT TO IMPERIAL CHEMICAL INDUSTRIES. DR. ARMSTRONG, IN ADDITION TO A DISTINGUISHED RECORD AS A RESEARCH CHEMIST, HAD HAD A WIDE EXPERIENCE IN LARGE SCALE INDUSTRY BEFORE GOING, THREE YEARS AGO, TO TAKE CHARGE OF THE BRITISH DYESTUFFS CORPORATION. HE WAS ELECTED A FELLOW OF THE ROYAL SOCIETY AT THE AGE OF 42, AND SERVED FOR TWO YEARS AS PRESIDENT OF THE SOCIETY OF CHEMICAL INDUSTRY.

Production and Uses of Stoneware Chemical Plant.—(I)

By B. M. Pearson

With increasing interest in the prevention of corrosion, there is no doubt that efforts will be made to extend the already considerable use of stoneware for chemical purposes. In what follows, our contributor gives a very detailed account of the subject, dealing exhaustively with raw materials, methods of manufacture, and uses.

THE desiderata of a material suitable for chemical plant construction are mechanical strength; imperviousness to the contents of the vessel (solid, liquid, or gaseous); passivity to the substances with which it is placed in contact (this comprises also the exercise of no deleterious effect on the materials, arising from corrosion or other reasons); replaceability of plant in a reasonable time and at a reasonable cost; more or less ready development in complicated as well as in the more simple shapes; and satisfactory behaviour of the material to thermal treatment. These, it will be found, comprise the principal desirable properties, and the ideal plant material will show them all.

Economic Considerations

The economics of any given material will depend upon the first cost, the service given in use, and the ultimate life. Thus, under some circumstances a cheap constructional plant material might be more advantageous to use, even though it has a relatively shorter effective life than another, considerably more expensive, material. The cheaper material should, of course, not contaminate the process unduly; unfortunately, this is the snag with most plant materials of this class, and so the expensive, but more serviceable, material will often be the only one to be considered. Again, for some operations, material belonging to the one class is eminently suitable, but for others a different class of plant must be used. It will be seen that the choice of a material for constructing chemical plant is not a simple matter; no hard and fast rules can be laid down and brought to bear on the matter. The only satisfactory method is to investigate each case and each material carefully, and to make the choice on the conditions and merits offered. In what follows, it is proposed to outline the development of chemical stoneware as a plant material; the spheres of application of the material and its limitations will be briefly reviewed to obtain an idea of the nature and properties of the material which is being handled, and the results to be expected in use will be indicated.

Numerous Forms of Chemical Stoneware

Actually, under the term chemical stoneware is included a considerable variety of bodies which have been developed so as to suit the material for widely varying conditions. When the ramifications of the chemical industry are considered, the advantage of being able to vary the nature of the material to accord with any particular requirements will be fully realised. Chemical stoneware is a ceramic material, and stands in a class by itself. The structure of the material is all-important, and upon this depend largely the physical properties. The structure of chemical stoneware is that of a dense, vitrified material, with a very low porosity. The chief properties of chemical stoneware are tabulated later.

The body is carefully produced so as to produce a refractory skeleton structure; the pores of this structure are more or less filled with a fused, vitrifiable material. This vitrifiable constituent serves to hold together the refractory framework, and so to impart mechanical strength and at the same time to reduce the porosity, thus giving a suitable dense body.

Production of Large and Complicated Plant

It is only within comparatively recent times that the technique of stoneware chemical plant manufacture has been mastered to a degree which would allow of the production of large and complicated shapes. Formerly, only the simple shapes were available for use, and these were not so satisfactory as they might have been. The plant designer could not give free play to his ideas, but had to adapt them to suit what the clay-worker could offer. This mitigated against the designing of the most efficient type of plant. The prejudice which arose in consequence was somewhat hard to overcome; there is, however, no reason for it to-day, when chemical stoneware can be applied to an immense number of purposes, and when, as a plant constructional material, it is most efficient.

Requisite Properties of the Clay Used

The requirements of a clay for the production of a chemical stoneware body are more or less definite. This clay forms the vitreous bond between the refractory particles. It must vitrify at a definite temperature, which will be, practically, the firing or the kiln temperature. Plasticity is another very essential requirement in the clay. Fortunately ball clay combines the properties of vitrifiability and considerable plasticity; it consequently plays a large part in stoneware bodies. The clay must have a wide softening or squatting range. This involves, for practical purposes, a difference in temperature between the vitrifying and the fusing points. The strength in the green state of the unfired clay should be as large as possible, to avoid the risk of deformation of the unfired ware.

The clay should give an easy drying body, to avoid risk of cracking and deformation during the drying process. A desirable point is for the drying shrinkage and also the firing shrinkage to be uniform, and to be as low as is consistent with the production of a good body, in order to give a finished article which will be reasonably accurate as regards dimensions.

Treatment of the Clay

A mixture of clays is used, as it is not possible to obtain any single clay which embraces all the desired properties. Very thorough treatment is given to the clay, as the cost of such treatment is more or less slight when compared to what would be involved in the failure of the moulded article owing to the use of faulty raw materials. The clays as received are ground and washed, then screened, and finally the excess of water is removed in filter presses. After this the various clays are blended, the other ingredients of the body added, and the whole mixed and pugged, so as to consolidate the mixture thoroughly. Although the real action is still somewhat obscure, it is essential to store the freshly pugged mixture for some considerable time before use.

Ageing the Clay Mixture

The effect of this ageing is certainly to increase the plasticity; the working and drying properties of the body also appear to be improved. The mixture is kept saturated during the ageing, and the storing is generally performed in underground cellars. Anything up to five years may be allowed for this ageing; from one to two years appears to be generally effective for most purposes. This ageing is, of course, a process which occasions considerable expense by locking up a large amount of capital; it is one which cannot, however, be neglected, if a satisfactory article is to be produced.

After the mixture has been aged for the necessary time, the bodies are moulded to the required shape. In the moulding, the shrinkage of the ware during drying and firing must be estimated and allowed for; so that it is essential for the shrinkage to be under control. The moulding is generally performed by hand in this branch of the ceramic industry, as it has been found that the economics of the process do not, except in special cases, permit of machine moulding. Simple repetition shapes, such as pipe and other cylindrical and prismatic shapes may be extruded on the auger-machine, and objects such as carboy stopper, Raschig rings for packing acid towers, etc., are usually moulded on automatic presses.

Working to a Blue Print

Orders for chemical stoneware are often accompanied by blue print and general specifications, and this work must accordingly be entrusted to skilled men who can read and interpret a blue print. The time required for moulding any particular shape may be hours, days, or weeks, depending on the size and complexity of the piece of ware in question. Casting is practised to some extent with some shapes, and appears to be worthy of very serious consideration, particularly for the shaping of difficult and complicated designs which are not easy to shape by hand in the usual way. For the moulding, in addition to the methods outlined above, plaster of

Paris moulds in conjunction with hand shaping are commonly employed.

The next stage after the shaping is the drying of the ware. No difficulty is offered by small and simple shapes. With large and complicated shapes, however, the drying is very difficult. Such complicated shapes offer a large number of bends, corners, and edges, and drying is very prone to take place more rapidly from these positions than from the plane surfaces offered. Also, if the drying is allowed to take place too quickly, the outside dries and shrinks before the inside has started to dry; consequently, the ware will be ruined, owing to the severe mechanical strains set up.

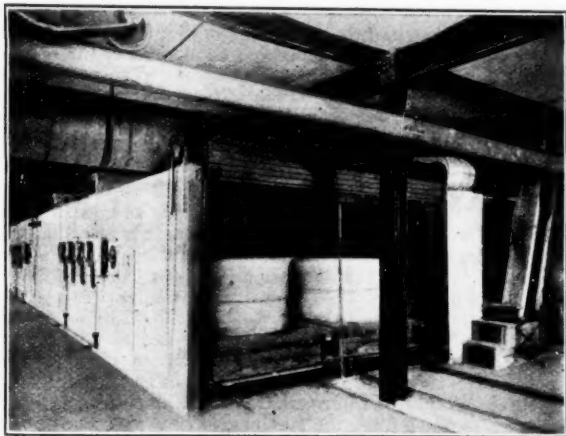
Drying the Ware

The drying may be conducted perfectly satisfactorily on a heated floor, but a very long time must be given to it, and it can only be allowed to proceed at an extremely slow rate. Drying in this manner will occupy anything from six to nine months. It may be very greatly speeded up by the employment of the humidity dryer. By this method, the speed of drying is kept under very close control, and may thus be performed so as to give the very best results.

In Fig. 1 is shown the Proctor humidity drier. The dryer is illustrated at work drying large glass melting pots; the drying of these pots has always offered very great difficulty, and is being performed perfectly satisfactorily in this type of plant.

The Method of Humidity Drying

The principle of humidity drying is quite simple. The dryer is insulated to prevent heat losses, and is steam heated. The ware, on admission into the drier, is heated up in a moist atmosphere, and consequently no drying takes place. After



(By courtesy of Procter & Schwartz, Inc.)

FIG. 1. HUMIDITY DRIER FOR DRYING LARGE CLAY SHAPES.

it has been very slowly heated up to the drying temperature in the humid atmosphere, it will be at a uniform temperature throughout, both inside and out. The humidity of the drier is now progressively decreased, and drying of the ware gradually takes place. As the ware is uniformly at the drying temperature throughout, the drying will also take place uniformly, and will proceed from the inside to the outside; the development of any mechanical strains, as well as unequal drying shrinkage, can easily be obviated by careful manipulation. The speed of drying is controlled by automatic regulation of the temperature and of the humidity of the drier atmosphere, and their maintenance at a predetermined value.

It will be appreciated that humidity drying is almost fool-proof. The drying is continuous. The ware is placed on cars which slowly pass through the drier. In a humidity dryer of the type shown, large complicated shapes may be dried in about three weeks, which gives a tremendous saving in time. The body shrinks anything from 5 to 12 per cent. (linear) during the drying, depending upon the nature and moisture content of the body.

(To be continued.)

Research Chemists' Salaries

To the Editor of THE CHEMICAL AGE.

SIR,—I should be grateful if you could allow me a little of your valuable space, as I think the following facts might interest your readers.

I was recently interviewed by a firm of chemical engineers who required a research chemist to undertake work on centrifuging. I was informed that I was the man for the job and that my degrees were just what the firm required. The managing director then broached the subject of salary, and I suggested that, after a three months probationary period, I should be paid £250 to £300 per annum. This amazed the gentleman, who told me that they expected to get a research chemist to work for 30s. per week for the first year and, when he was useful to them, his wages would be raised to the princely sum of £2 10s. to £3 per week.

I think that this displays adequately the attitude of some industrial firms to chemists, and perhaps it will cause some of your readers to give their views on the subject.—Yours, etc.

Ph.D., B.Sc., A.I.C.

"L. and N." Coal Distillation Meeting

At the first ordinary general meeting of "L. and N." Coal Distillation, Ltd., on Monday, Lieut.-Col. J. T. C. Moore-Brabazon, M.P., said that the company had accomplished the first step towards its object, which was to demonstrate that coal distillation by the process devised by Laing and Nielsen was a commercial possibility. A full-sized plant had been erected, and was now being worked. It was designed for a throughput of 100 tons per day, but everything pointed to its being able to deal with a throughput of 140 tons a day. From every ton of coal treated, 13 or 14 cwt. of residual fuel was produced and about 20 gals. of oil. The refining plant at Barnsley was already at work on the oil produced by the company. Two developments, he pointed out, had followed on the company's successful start. One was that the Leicestershire Colliery and Pipe Co. (in co-operation with whom the existing plant was erected) were negotiating for the purchase of the present plant and the erection of four more retorts capable of treating, in all, 700 tons a day. The other development was the making of an agreement with the Irish Coal Syndicate for the sale to them of the Northern Ireland rights of the process, which it was proposed to work on the Irish shale and cannel coal. Mr. Frank Hodges, who also addressed the meeting, said that on the basis of the company's Leicestershire experience they could provide a remedy for the ills of the coal trade which would be fundamental and far-reaching. They produced 13 to 14 cwt. of fuel from a ton of coal after 20 gallons of oil had been extracted. It was clear, as they had 6 cwt. less in hard fuel than the original ton of coal, that for every 20 million tons of coal now produced approximately 29 million tons would have to be produced hereafter in order to yield the same weight of hard fuel after distillation. On this basis employment would be provided for 30,000 extra miners at an output per miner of 300 tons of coal per annum.

British Wood Distillation Industry

ATTENTION has been drawn to the steady decline in the production of wood distillation products in this country. Competition by synthetic products has grown to such an extent that charcoal is the only product not affected. British works are thus faced with a difficult position, and attempts have been made to suggest a remedy. A protective tariff seems out of the question, and the only aid possible must come from the decision of the home customer to buy British products instead of foreign ones; unless, indeed, the home consumer takes up this attitude he may presently find no British supplies available, and in such a case foreign quotations almost invariably advance.

An I.C.I. Disclaimer

WE are informed by the secretary of Imperial Chemical Industries, Ltd., that the statement which has appeared in certain newspapers to the effect that Imperial Chemical Industries has made an offer to acquire the shares of the Salt Union is absolutely untrue. No proposal to acquire Salt Union shares has ever been made by Imperial Chemical Industries, nor has such a course ever been discussed by the latter company or even contemplated by them.

Chemical Engineers' Tour to U.S.A.

Some Prominent Figures

THE chemical engineers' party, who leave Southampton on August 11 for Quebec, will have the pleasure of their President's company both on the voyage and on the land cruise. Sir Alexander Gibb, who is this year's president of the Institution of Chemical Engineers, is one of the original members, and served as vice-president in 1925. He is the senior member of the firm of Sir Alexander Gibb and Partners, civil engineers.



SIR ALEXANDER GIBB

and his successes and distinctions in the engineering world are fully worthy of a pupil of Sir J. Wolfe Barry and H. M. Brunel. During the war and afterwards he rendered very distinguished services to the Allies and held various posts of high rank and responsibility. He was created C.B., in 1918, K.B.E., in the same year, and G.B.E. in 1920.

But Sir Alexander Gibb carries these honours and responsibilities very easily, and is one of the most sociable of colleagues. In the genial meetings of the chemical engineers, he vies with



PROFESSOR J. F. THORPE, F.R.S.

the youngest. This is probably due to his cultivation of human interests outside his professional responsibilities. He is a student of poetry, a great authority on Burns, and a member of several historical and antiquarian societies. Occasionally he gets a few days off for deer-stalking, shooting, hunting and fishing, and his country homes at Tangier Park, Hants, and Grinard, Rosshire, provide full scope for these sports. There is only one thing he really dislikes, and that is the limelight. He will do as much to avoid publicity as many do to gain it.

Another distinguished tourist who will add to the pleasure of the party is Professor Jocelyn F. Thorpe, F.R.S., the president of the Chemical Society. Though the Chemical Society are taking no official part in the tour, the presence of their president will be welcome to his fellow-travellers and their American hosts. Professor Thorpe is one of the leading British organic chemists, has published a very large volume of research on organic chemistry, and has inspired many pupils to carry out brilliant investigations. As professor of organic chemistry at the Royal College of Science he has built up a very fine research school. He has served on many important committees, including some which carried out important war work, and has been the recipient of various medals and distinctions.

With the close of the chemical engineers' tour on September 2 the Society of Chemical Industry will take charge of the arrangements, and at the annual meetings in New York, Mr. Francis H. Carr, the president, will preside and deliver his presidential address. Mr. Carr's two years in the chair have been distinguished by initiative and hard work for the Society, and his presidential term will fittingly close in New York with the exceptionally interesting annual meeting of 1928.

Interim Report on Ethyl Petrol

Prohibition Unnecessary But Precautions Urged

THE committee appointed to inquire into the danger to health arising from the use of ethyl motor spirit has issued an interim report. The conclusions of the Committee are as follows:—

Having very carefully considered the experimental work which has been done in the United States in regard to the use of ethyl petrol, and the evidence which we ourselves have taken, and having had the advantage of discussing the matter with Surgeon-General Cumming and Dr. Leake, of the United States Public Health Service, we have come to the conclusion that the findings of the United States Government Committee were justified. In our opinion the further experience since that Committee reported has supported their conclusion that there were no reasons for prohibiting the use of ethyl petrol.

Precautions

Although there is no evidence to show that the use of ethyl petrol as a motor fuel involves more dangers to health than the use of ordinary petrol, we think, for the time being, the precautions indicated in the regulations suggested by the United States Committee are desirable. In particular we wish to emphasise the warning that ethyl petrol should be used only as a motor fuel, and not for such purposes as cooking or cleaning. No regulations have actually been made in the United States as regards the distribution of ethyl petrol, but careful observance of the regulations recommended in regard to notices to the public, the labelling of cans and pumps, the distribution of leaflets, and the dyeing of the substance red as an additional check against its use otherwise than as a motor fuel, has been secured by the terms of the contracts between the proprietors of the fuel and the retailers. Sales in this country are governed in the same way, and we do not desire to recommend any legislative action so long as the terms of the contract are maintained.

We think it well to point out that adequate ventilation of all garages whether or not ethyl petrol is used is a matter of considerable importance, and that the danger from carbon monoxide in an unventilated garage is very serious.

The Question of Investigations

Owing to the small consumption of ethyl petrol in this country it would be impossible at present to embark upon an extensive examination of human subjects, and in view of the scope and thoroughness of the investigations of this type made in the United States, we consider it would be superfluous to do so. The value of such work is in proportion to the length of time it has been carried on, and in this respect any investigations in this country would necessarily fall short by three years of the United States investigations, which are still being continued. We have, however, decided to make some investigations with a view to confirming certain points in the work carried out in the United States, and possibly elucidating some points which are not covered by that work.

Chemical Factories

Report of Chief Inspector

IN the *Annual Report of the Chief Inspector of Factories and Workshops* (H.M. Stationery Office, 2s. 6d.), just issued, it is stated, with regard to chemical factories, that the chief difficulties encountered have been connected with the examination of tar stills and similar vessels; whilst many firms have adopted the recommendations of the Joint Committee of the Tar Distillers' and British Chemical Manufacturers' Associations in their entirety, observing precautions which go considerably further than the minimum requirements of the Regulations, there are still a good many plants where breaches of Regulation 7 occur every time a still is opened up for cleaning. The cleaners themselves are not allowed to enter the vessel until it has been certified as safe; but the man appointed as a responsible person does not always realise that he is breaking the Regulation by going in himself, as a preliminary, to examine for dangerous gas by means of his sense of smell.

In some places the foreman had done this for years before the Regulations were made, and in the smaller works there is often no superior official who can exercise adequate supervision over such a man with his long practical experience. Stills are only opened up at long intervals, so it is very rarely that an inspector can have the opportunity of seeing personally what happens on such occasions; the fact that the Regulation is broken at those times is either admitted or can be deduced from the absence of facilities for any other test.

Hence a great deal of time has to be devoted to convincing these foremen themselves that it is imperative for them to adopt methods which conform to the legal requirements; they are now beginning to realise the magnitude of the risk they have been taking in the past, and provision is being made for satisfactory tests.

A new short period (half-hour) self-contained breathing apparatus known as the Salvus apparatus, has been submitted for test and approved for use under the Chemical Works Regulations.

Report of the Medical Officer

In the report of the senior medical inspector it is stated that two somewhat severe cases of arsenical dermatitis arose in the manufacture of white arsenic, and three cases of toxic jaundice occurred, all of which were due to the inhalation of arsienuretted hydrogen in the manufacture of salts of zinc. Thirty-eight cases of aniline poisoning were reported, due to the following causes: Making intermediates (D.M.B., D.M.T., T.H.T.), 18; making aniline, 6; paranitraniline powder, 5; splashing or spilling aniline oil, 3; paratoluidine, 3; aniline black dyeing, 2; and other causes, 1. Ten cases occurred at one works within a few days, from the handling of dinitrobenzol in a particular process. Special attention has been given to the manufacture of artificial silk by the viscose process, and a long report on hazards in this industry is given.

Industrial Drying of Peat

At the general meeting of Peco, Ltd., held in London on Friday, July 27, Sir Arthur Duckham (chairman and joint managing director), presided. Dealing with the company's work on the drying of peat, he said that from the results obtained on the large scale unit at Dumfries they were satisfied that they had a commercial process for the treatment of peat, and a plant which would be low in operating and labour costs and which did not require skilled attention; while the capital cost would not exceed £1 12s. per ton annual output of briquettes. He spoke highly of the efforts of the patentees, the Techno-Chemical Laboratories, Ltd.

New Tin Smelter

THE EARL OF DERBY, on Friday, July 13, set in motion the plant of the Penpoll Tin Smelting Co., Ltd., at Bootle. The Penpoll smelter is capable of refining one-third of the total tin ore supply of the entire world. One of the features of the works is a plant for extracting tin from the furnace smoke, and the reclamation of tin from the air in this way will increase the output of the smelter by approximately 2 per cent., representing 200 tons of metallic tin a year. The smelting capacity of the plant is 1,000 tons of tin ore a month, and this can be expanded up to six times that quantity.

"C.A." Queries

We receive so many inquiries from readers as to technical, industrial, and other points, that we have decided to make a selection for publication. In cases where the answers are of general interest, they will be published; in others, the answers will simply be passed on to the inquirers. Readers are invited to supply information on the subjects of the queries:—

107. (Plant for Sulphate of Ammonia).—"Could you give us the names of any firms in England who are engaged in making plant for the manufacture of neutral sulphate of ammonia from air? The plant required would have to produce 750-1,000 tons per month."

108. (Polycarbon).—"The name of the manufacturer or agent of a decolourising carbon known as "Polycarbon" is required."

Chemical Matters in Parliament

Conjunctivitis in the Artificial Silk Industry

In reply to Mr. Kelly (House of Commons, July 26), Sir W. Joynson-Hicks stated that he had received reports by inspectors which showed that, except in one works where there had been a large increase in the number of persons employed, the number of cases of conjunctivitis had, during recent months, been decreasing. This industry was receiving the closest attention both from the staff generally and from the medical inspectors and much had been, and was being, done to improve the conditions.

Meeting of Australian Commonwealth Carbide, Ltd.

AN agreement subject to ratification by the Tasmanian Parliament which has been arrived at between the Tasmanian Government and the Australian Commonwealth Carbide, Ltd., was subjected to severe criticism on Thursday, July 27, at the first annual general meeting of the shareholders of Australian Commonwealth Carbide, Ltd., held in London. Mr. F. A. Macquisten, K.C., M.P., the chairman of the company, who presided, said in order to relieve the worst fears of any of the shareholders, he would say at once that while the company's business was far from being what they had been led to believe, it was nevertheless, when the whole facts had come to light, in the opinion of the board, an enterprise that might be expected in the course of time to develop into a steady profit-making undertaking. Through unaccountable variations between the official and authentic statements which formed the basis on which the company's prospectus was framed, possibly due to the non-commercial form of Government accounts, the very large profits believed to be arising from the company's work were found to be incorrect, and at one time it was feared that the venture might have been a losing one; but this fear had so far been dispelled by subsequent experience, and hope had taken its place. A summary of the present position of the company showed that the reputation of the carbide had been established. Its chief utility and opportunity for an expanding market in Australia was for industrial purposes, and it was the policy of the Australian Government to further the development of an industrial Australia. Results from Australia pointed to a marked industrial development, and a consequent extension of the company's market in the future as a result of that policy.

After criticism by various shareholders of the Tasmanian Government, with whom the negotiations had been carried on, the report and accounts were adopted.

Appointments Vacant

TWO CHEMISTS for the Meat Products Research Branch of the New Zealand Department of Scientific and Industrial Research, Wellington, N.Z.—The High Commissioner for New Zealand, 415, Strand, London, W.C.2. September 8.

LECTURER IN ORGANIC CHEMISTRY in the Sir John Cass Technical Institute, Jewry Street, Aldgate, London, E.C.3.—The Principal. September 12.

ASSISTANT ANALYST in the Government Analyst's Department, Trinidad.—The Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1. August 20.

From Week to Week

MR. AND MRS. ROBERT MOND have arrived at Castlemona, Dinard, where they will remain until September.

MR. GRANT B. SHIPLEY, chairman and president of the American Mond Nickel Co., Ltd., has been elected a director of the Mond Nickel Co., Ltd.

THE ZINC AND LEAD mines near Llandovery are to be re-opened after a period of two hundred years, and work on the project has been commenced.

AT A MEETING on Friday, July 27, of the shareholders of the Mond Nickel Co., Ltd., the resolutions passed recently in connection with the proposed capital changes were unanimously confirmed.

DR. S. M. HERMAN, president of the Apex Chemical Co., New York, and Mr. Albert Morgan, sales manager of the Eagle-Picher Lead Co., New York, are at present on vacation and business in Europe.

AS THE RESULT OF AN ACCIDENT at the works of Synthetic Ammonia and Nitrates, Ltd., T. E. Wynne, of Middlesbrough, was admitted to the North Ormesby Hospital on Tuesday with severe head injuries.

IMPERIAL CHEMICAL INDUSTRIES, LTD., inform us that Dr. E. F. Armstrong, having resigned his position as a director of British Dyestuffs Corporation, Ltd., has accepted a retainer as consultant to Imperial Chemical Industries, Ltd.

MR. EDGAR STANSFIELD, research engineer of the Scientific Research Council of Alberta, and Mr. B. J. Haanel, of the Department of Mines, Ottawa, will represent Canada at the International Fuel Conference in September, in London.

COLONEL SIR EDWARD ALLEN BROTHERTON, Bart., D.L., LL.D., chairman of Brotherton and Co., Ltd., has been elected a Freeman of the City of Wakefield. The firm of Brotherton and Co., Ltd., was founded by Sir Edward at Wakefield just fifty years ago.

THE JOINT London dinner of the British chemical societies and the Chemical Industry Club, which has now become an annual function, has been fixed for Friday, November 9, at the Connaught Rooms, London. Dr. G. C. Clayton, M.P., will preside. The dinner will be followed by dancing.

THE SCHEME FOR CENTRALISED SELLING of Chilean nitrate has been drawn up by the Producers' Association, and during the greater part of July has been under consideration both in Chile and in this country. An extraordinary meeting of the association has been called for August 9, when the new statutes will be submitted for ratification.

THE *Financial News* states that according to Berlin reports, negotiations between the Soviet Government and the Mond Nickel Co. have resulted in an agreement for the purchase of a large quantity of nickel. The amount involved is said to be 2,000 tons. The Soviet Government will pay cash for the nickel. Negotiations for the purchase of other metals in London are also in progress.

AT THE MEETING of the Yorkshire Fishery Board, at York, on Saturday, July 28, Mr. J. W. Morkill, who presided, announced that the Executive of the National Association of Fishery Boards had interviewed a deputation of tar distillers on the subject of the damage done to fish by tar on roads near streams, and that the distillers were willing and anxious to do all they could to prevent this damage.

BIRMINGHAM TAME AND REA DRAINAGE BOARD, in a report on the operations of the Board, refer to the success of a scheme for the utilisation of methane or sludge gas generated in the digestion tanks at Saltley works. They point out that the gas engine and gas collectors provided for the working of the sludge gas power plant have been in operation since September, and the experience gained confirms the estimate made when the scheme was adopted in 1926, that the plant would be capable of producing 300,000 units of electricity per annum.

A NUMBER OF LONG SERVICE AWARDS to employees of Imperial Chemical Industries have been made lately. At a recent function at Bristol 125 employees of the Netham Alkali Works received awards and on July 12, 31 awards were made to the employees of Bickford Smith and Co., Ltd. On Thursday, July 26, presentations were made to old employees in the service of the Buxton Lime Firms, Ltd., and on Wednesday a number of awards were made to workmen of Raynes and Co., Limestone Quarries, Colwyn Bay. In most cases the awards were in the form of watches and medals.

ARTIFICIAL SILK NEWS.—An issue of shares was made on Thursday, through Cull and Co., of 2,000,000 seven per cent. first cumulative preference shares of £1 each, in British Celanese, Ltd.—In 1927, Japan produced 12,000,000 lbs. of artificial silk, or nearly 5 per cent. of the world's production.—It is rumoured in Marsden, near Huddersfield, that the artificial silk industry is to be introduced into the district.—Barcelona imports of artificial silk in 1927 amounted to 1,013 tons. Imports from British sources amounted to 250 tons, from Germany to 226 tons, and from Holland to 191 tons.—The Branstor Artificial Silk Co., Ltd., is to extend its works to increase the output from four to ten tons a day.

PROCTOR, JOHNSON AND Co., chemical and colour manufacturers, have removed from 95, Corporation Street, Manchester, to Park Street, Ardwick.

SYNTHETIC NITROGEN COMPOUNDS are to be produced at works to be erected at Limburg, Holland, the State undertaking to take over the entire output.

THE PONTARDULAIS (SWANSEA VALLEY) CHEMICAL WORKS, which closed down several months ago, is to resume operations after the August holidays.

SOLIDOL CHEMICALS, LTD., held its statutory meeting in London, on Wednesday, when Mr. T. Wareham Smith announced that widespread inquiries for their product, solid lysol, had been received.

MR. S. GERALD HILL, B.Sc., A.R.C.S., D.I.C., of Starcross, Devon, has been awarded a research fellowship for research in the chemical technology department of the Imperial College of Science, London.

MR. JOHN BARLOWE, chief engineer with J. and T. White, chemical manufacturers, of Rutherglen, recently celebrated his golden wedding, and he and his wife were the recipients of gifts from the staff and directors of the firm.

"ISOLATION OR EMPIRE?" is the title of an article by Lord Melchett in the first Safeguarding of Industry Supplement to *The Daily Telegraph*, in which various industrialists contribute their views on safeguarding.

MR. G. C. USHER, general manager and director of International Combustion, Ltd., sailed from England on July 28 for an extensive tour in the United States in connection with the "Lopulco" interests. He will be away until September 16.

A VERDICT of accidental death was returned at the inquest at Chelmsford on Monday on Thomas Valentine, described as a technical chemist, who was fatally injured by his motor cycle skidding on the Chelmsford-Colchester road.

FOLLOWING AN INQUIRY into the matter, the Ministry of Transport, in consultation with the other Government Departments concerned, has decided that it is undesirable to make any alteration in the existing limit of navigation of petroleum tank ships in the Thames.

UNIVERSITY NEWS.—*Edinburgh*: The Distillers Co. has instituted a studentship to assist students of technical chemistry and will subsequently find a position for the successful candidate in its organisation at a salary of £250 per annum.—*London*: A Beit Fellowship has been awarded to Dr. R. H. Purcell, who will work at the Royal College of Science on the effect of intensive drying on pure substances.

AT A MEETING of the Glasgow Chamber of Commerce, Mr. James Morton, chairman of Scottish Dyes, Ltd., the president of the Chamber, referred to the report of the Industrial Transference Board and condemned the idea that the removal from the Glasgow area of many of the population was a solution of the depressed conditions. He believed that to accept the views indicated in the report would be a confession of defeat. He would be better pleased to see instead a search for means to restore to the heavy industries the power to compete with other countries.

AMONG THE EXHIBITORS at the Royal Sanitary Institute Congress, held at Plymouth, was the Paterson Engineering Co., Ltd. The company exhibited its Chloronomes, Pulser and Manometer types, and also a new type for automatically proportioning the addition of chlorine to varying flows of water. The Pulser and Manometer types are very well known and have been installed very extensively throughout the world. The bath type has been installed at a number of public swimming baths in conjunction with continuous swimming bath purification plants. The automatic chloronome which was being exhibited for the first time fills a need felt for an accurate instrument administering chlorine gas to a supply which is continually varying.

THE FRENCH GOVERNMENT nitrogen fixation plant at Toulouse occupies an area of 80 hectares, of which 13 hectares are under cover, according to Mr. Daniel J. Reagan, American assistant commercial attaché in Paris. The electric power plant that has been installed can develop 30,000 kilowatts. The steam boilers and the heat recovery plant are capable of producing 55 tons of steam superheated to 350° C. at a pressure of 16 kilos per hour, and even more should necessity arise. The steam turbines working the low pressure compressors will absorb 22 tons of steam at a pressure of 16 kilos per hour, which will be distributed to the various plants at a pressure of four kilos; the pumping stations will raise 310,000 cubic metres of water every 24 hours, from the river Garonne.

Obituary

MR. H. W. CHAPPELL, retired manufacturing chemist, for many years a director of the General Chemical Co., New York, at the age of 71.

MR. E. C. R. MARKS, patent agent, on Monday at Birmingham, in his fifty-third year. Mr. Marks was a member of the well known firm of engineering consultants and patent agents, Marks and Clerk, and he handled many chemical patents. In his early days he was lecturer on engineering subjects at the Birmingham Municipal Technical School.

MR. E. G. NELLIS, president and founder of the American Chemical Catalog Co., New York, at the age of 47. He was a well-known figure in newspaper and advertising work.

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Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

Abstracts of Complete Specifications

- 293,056. METHANOL AND OTHER ALCOHOLS, PRODUCTION OF—AND THE PREPARATION OF CATALYSTS THEREFOR. Synthetic Ammonia and Nitrates, Ltd., and R. G. Franklin, Billingham, Stockton on Tees, Durham. Application date, December 23, 1926.

The process is for the preparation of zinc and chromium catalysts for the synthesis of methanol and other alcohols. Various basic zinc carbonates and basic chromium carbonates are mixed together or are precipitated together, and the mixture is dried and made into pellets for use as a catalyst. In an example a solution of sodium bichromate is mixed with sulphuric acid and heated with granulated zinc to reduce the bichromate to chromium sulphate. A solution of soda ash is then added to precipitate a mixture of basic zinc and chromium carbonates, which is separated, washed with hot water and then dried. The catalyst preferably contains 7–8 atoms of zinc to 3–2 atoms of chromium. These catalysts can be regenerated after use by dissolving in sulphuric acid and precipitating with soda ash.

- 293,077. METALLIC APPARATUS FOR CARRYING OUT CHEMICAL AND OTHER PROCESSES. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, March 3, 1927.

When carrying out chemical processes with gases or liquids containing hydrogen, oxygen, or sulphur, in iron apparatus at high temperatures or pressures, it is found that the structure of the iron is affected, and it tends to become porous and to fracture. This may be avoided by the use of iron which is particularly free from oxygen, sulphur, carbon, etc. The iron may be obtained by metallurgical working, or by treating ordinary metal at high temperature with gases such as hydrogen, water vapour, carbon monoxide, or dioxide, which form volatile compounds with the impurities in the iron. To determine whether the iron is suitable, it is microscopically examined after treatment at high temperature and pressure with oxygen, sulphur, and hydrogen. An unsuitable sample shows the effects of corrosion around the grains. It is found that iron prepared with the aid of manganese by the Martin smelting process, and which is freed from oxide is a suitable material for such apparatus. Ordinary mild steel can be freed from carbon and oxygen by prolonged treatment with hydrogen at a temperature above 900°C. Apparatus constructed of this special iron may also have the most exposed parts coated with a resistant material such as chromium, tungsten, uranium, manganese, aluminium, silver, copper, or enamel.

- 293,084. COLLOIDAL MATERIALS, MANUFACTURE AND TREATMENT OF. J. Riley and Sons, Ltd., Chemical and Copper Works, Hapton, Lancs., W. H. Bentley, 25, Uppingham Road, Wallasey, Cheshire, and W. M. Coates, 28, Admiral Street, Burnley, Lancs. Application date, March 23, 1927.

Colloidal material such as sulphur which is prepared by acidifying solutions of polysulphides in the presence of gelatine, glue, gums, etc., is allowed to set to a jelly, and the jelly is then treated for the removal of the soluble salt which it contains, instead of treating the solution by dialysis. The jelly is obtained in the form of rods, strips, or sheets, or small pieces, having a large surface area, and is exposed to the air whereby efflorescence occurs and a large proportion of the soluble salt finds its way to the surface and can be removed by shaking. About two thirds of the soluble salt can be removed in this manner, and the remaining jelly may be dissolved in water. The remainder of the soluble salt could be removed from the jelly by treating it with cold water which is changed several times. It is found that the soluble salt passes into the water, and the jelly then consists only of the colloidal product and the glue or the like. Examples are given of the preparation of colloidal sulphur from sodium polysulphide and from calcium pentasulphide, colloidal lead arsenate from sodium arsenate and lead acetate, copper arsenite from lead arsenite and copper sulphate, and calcium arsenate from calcium chloride and sodium arsenate.

- 293,110. DYESTUFFS, PRODUCTION OF. L. B. Holliday and Co., Ltd., J. Kitson, C. Shaw, Leeds Road, Deighton, Huddersfield. Application date, March 30, 1927.

Chloranil or bromanil is hydrolysed by heating with aqueous alkali to 40°–80° C. The unchanged chloranil or bromanil is filtered off with the resulting alkali-2 : 5-dihydroxy-3 : 6-dichlor-benzoquinone or alkali-2 : 5-dihydroxy-3 : 6-dibrom-benzoquinone. The dyestuff is separated from the filtrate by precipitation with an acid, or by salting out. The product dyes wool and silk brown. The sodium 2 : 5-dichlor-benzoquinone when heated with water yields a brown product which dyes wool brown.

- 293,138. CARRYING OUT CHEMICAL REACTIONS IN WHICH REACTION GASES ARE CIRCULATED. Synthetic Ammonia and Nitrates, Ltd., and J. Hughes, Billingham, Stockton-on-Tees, Durham. Application date, April 6, 1927.

In the synthetic production of ammonia from hydrogen and atmospheric nitrogen, the gases contain small proportions of methane and argon which accumulate in the circulating gases and are usually removed by continuously or periodically removing part of the circulating gas. A similar procedure is adopted in the production of methanol from carbon monoxide and hydrogen. The gases withdrawn have usually been wasted, but in this invention they are scrubbed under pressure with a non-volatile solvent such as paraffin or kerosene, which dissolves methane, argon, and other atmospheric gases in greater proportion than hydrogen or nitrogen. A high gas rate is used, since the liquor always becomes saturated with hydrogen, and the loss of hydrogen is therefore constant, while the amount of inert gas removed per unit time is increased by increasing the gas rate. If the pressure on the kerosene is released in stages, gases are obtained containing increased proportions of various constituents. Thus in the case of ammonia synthesis, the pressure is reduced from 200 atmospheres to 3 atmospheres and the gas evolved from the kerosene contains most of the absorbed methane, nitrogen, and hydrogen. The pressure is then reduced to atmospheric, and the gas obtained has a greater argon-nitrogen ratio than the original mixture. When hydrogen and methane are removed from it, it contains 50–60 per cent. of argon.

- 293,172. CARBON DISULPHIDE, MANUFACTURE OF. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, May 26, 1927.

Gaseous hydrocarbons such as methane, or gases containing it, are treated with gases containing sulphur, such as hydrogen sulphide, with or without oxygen, in the presence of a catalyst such as aluminium oxide, active charcoal, silica gel, pumice stone, and carborundum. The gases are passed through earthenware pipes heated to 1,000° C., or through an electric arc, or over electrically heated carbon. A yield of 50 per cent. carbon disulphide is obtained in a high state of purity, and the remaining hydrogen may be used for the hydrogenation of coal and other purposes.

- 293,185. HYDROCARBONS MORE ESPECIALLY LIQUID HYDROCARBONS, MANUFACTURE AND PRODUCTION OF. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, June 9, 1927.

A high yield of liquid hydrocarbons can be obtained from hydrogen and oxides of carbon at ordinary or high pressure, and high temperature, if contact substances are used containing copper, silver, gold, zinc, or mixtures, or alloys, or oxides which are reduced to metals under conditions of working, and also elements of the eighth group of the periodic system, or their compounds substantially in the absence of carriers of low heat conductivity. The liquid hydrocarbons are rich in low boiling constituents and are suitable as fuel for internal combustion engines. They do not require the addition of anti-knocking agents. Several examples are given of the method of preparing the catalyst, and of the preparation of hydrocarbons.

NOTE.—Abstracts of the following specifications which are now accepted, appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention:—273,244 (J. D. Riedel Akt.-Ges.) relating to hydroaromatic dicarboxylic acids, see Vol. XVII, p. 201; 280,846 (I.G. Farbenindustrie Akt.-Ges.) relating to vat dyestuffs, see Vol. XVIII, p. 85; 286,730 (Schieferwerke Ausdauer Akt.-Ges.) relating to hexamethylene tetramine, see Vol. XVIII, p. 463; 288,591 (C. Still) relating to purification of benzol fractions, see Vol. XVIII, p. 555; 289,759 (Soc. l'Air Liquide, Soc. Anon. pour l'Etude et l'Exploitation des Procédés G. Claude) relating to exothermic catalytic chemical reactions, see Vol. XIX, p. 11.

International Specifications not yet Accepted

291,340. NAPHTHOQUINONE DERIVATIVES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, May 28, 1927.

A 7-acylamino-1-hydroxy-naphthalene is oxidised by means of chromic anhydride in acetic acid solution to obtain a 7-acylamino-1:4-naphthoquinone. The preparation of 7-acetamino-1:4-naphthoquinone, 7-benzoylamino-1:4-naphthoquinone, 7-N-p-toluene-sulphonylamino-1:4-naphthoquinone, and the sodium salt of 7-benzoylamino-1:4-naphthoquinone-3-sulphonic acid is described.

291,347. ACIDYL NAPHTHALENES AND ACENAPHTHENES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, May 30, 1927. Addition to 279,506. (See THE CHEMICAL AGE, Vol. XVII, p. 623.)

1:5-dibenzoyl-naphthalene is obtained from naphthalene and benzoyl chloride, dichlor-acetyl-acenaphthene from acenaphthene and monochlor-acetylchloride, diacetyl-acenaphthene from acenaphthene and acetyl chloride, employing aluminium chloride as condensing agent.

291,355. PIGMENTS. C. Deguide, 11, Rue du Casino, Enghien, Seine-et-Oise, France. International Convention date, May 30, 1927.

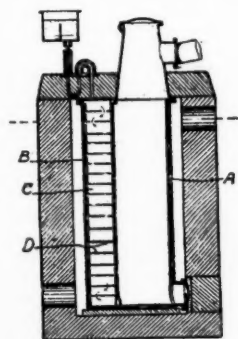
Zinc sulphate solution is treated with barium hydrate to precipitate barium sulphate and zinc hydrate, which mixture is calcined to convert the zinc hydrate into zinc oxide.

291,379. DESULPHURISING LIQUID HYDROCARBONS. T. B. Kimball, c/o Shell Co. of California, Martinez, California. International Convention date, May 31, 1927.

Sulphur compounds are removed from gasoline or kerosene by vaporising and treating with caustic soda solution above the condensation temperature of the vapour, but below the boiling point of the solution at the temperature employed.

291,382. CARBON BISULPHIDE. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, May 31, 1927. Addition to 237,716 and 282,049. (See THE CHEMICAL AGE, Vol. XIII, p. 254, and Vol. XVIII, p. 150.)

Superheated sulphur vapour is passed over heated carbon to obtain carbon disulphide. The reaction chamber A and superheating chamber B are formed from a single iron or steel



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casting. The chamber B has a non-corrodible inner surface and is filled with Raschig rings or bauxite, or may be provided with trays C having openings D, or with plates having staggered openings.

291,361. DYES AND INTERMEDIATES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, May 30, 1927.

3:5-Dihydroxy- and 3:5-dihydroxy-4-halogen benzoic acids are subjected to alkylation, nitration and reduction, and substitution of the resulting amino group by the thioglycollic acid residue to obtain 4:6-dialkoxyphenyl- and 4:6-dialkoxy-5-halogenphenyl-1-thioglycollic-2-carboxylic acids. These thioglycollic-carboxylic acids may be treated with alkaline condensing agents and carbon dioxide removed, or with acetic anhydride and the acetyl group removed, to obtain 5:7-dialkoxy- and 5:7-dialkoxy-6-halogen-3-oxythionaphthenes. These thionaphthenes can be oxidised, or they or their α -anils or oener—derivatives can be coupled with the usual components of the benzene, naphthalene, or anthracene series to obtain thioindigoid dyestuffs. Examples are given.

LATEST NOTIFICATIONS.

- 294,462. Process for the manufacture of halogenated organic compounds. Compagnie Nationale de Matières Colorantes et Manufactures de Produits Chimiques du Nord Reunies Etablissements Kuhlmann. July 23, 1927.
- 294,226. Manufacture of acetic acid from acetylene, and apparatus therefor. Kárpáti, Dr. J., and Hubsch, Dr. M. G. July 21, 1927.
- 294,227. Manufacture of acetaldehyde from acetylene, and apparatus therefor. Kárpáti, Dr. J., and Hubsch, Dr. M. G. July 21, 1927.
- 294,235. Manufacture of dry halogen-calcium-starch preparations. Henkel & Cie Ges. July 21, 1927.
- 294,236. Process for the manufacture of boric acid. American Potash and Chemical Corporation. July 22, 1927.
- 294,238. Process for the manufacture of alkylated phenols. Schering-Kahlbaum Akt.-Ges. July 21, 1927.
- 294,170. Containers for cold liquids. I.G. Farbenindustrie Akt.-Ges. July 19, 1927.
- 294,474. Manufacture and production of artificial compositions, especially those resembling rubber. I.G. Farbenindustrie Akt.-Ges. July 23, 1927.
- 294,247. Manufacture of light-sensitive materials. Kalle and Co. Akt.-Ges. July 21, 1927.
- 294,248. Manufacture of solid stable diazo compounds. Kalle and Co. Akt.-Ges. July 21, 1927.
- 294,150. Methods and apparatus for the production of hydrogen. Oxhydrique Francaise. July 18, 1927.
- 294,153. Means for the continuous removal of agglomerates from rubber dispersions and the like. Anode Rubber Co. July 18, 1927.
- 294,154. Manufacture of metal-coated paper. Gloom, H. July 18, 1927.
- 294,253. Urea-formaldehyde condensates. Budd Manufacturing Co., E. G. July 21, 1927.
- 294,254. Urea-formaldehyde condensates. Budd Manufacturing Co., E. G. July 21, 1927.
- 294,214. Manufacture of activated charcoal. Soc. Anon des Charbons Actifs E. Urbain. July 20, 1927.
- 294,215. Apparatus for filtering rubber dispersions and the like. Anode Rubber Co., Ltd. July 20, 1927.
- 294,259. Purification of metallic salt solutions contaminated by organic substances. I.G. Farbenindustrie Akt.-Ges. July 21, 1927.
- 294,263. Manufacture of thio-semi-carbazones of arsenophenol-aldehydes or arsenophenol-ketones. I.G. Farbenindustrie Akt.-Ges. July 21, 1927.
- 294,264. Manufacture of silicic acid sols. I.G. Farbenindustrie Akt.-Ges. July 21, 1927.
- 294,265. Processes for the manufacture of hydrogen peroxide. Askenasy, P. July 21, 1927.
- 294,484. Process for producing a coating of chromium on objects of iron and steel, or aluminium, and particularly on knives, forks, and spoons. Leiser, Dr. H. July 21, 1927.
- 294,485. Manufacture of products from cellulose derivatives. I.G. Farbenindustrie Akt.-Ges. July 23, 1927.
- 294,486. Manufacture of dyestuffs. Soc. of Chemical Industry in Basle. July 21, 1927.

Specifications Accepted with Date of Application

- 267,121. Intermediates products and vat dyestuffs from diaroyl perylenes, Manufacture of. Compagnie Nationale de Matières Colorantes et Manufactures de Produits Chimiques du Nord Reunies Etablissements Kuhlmann. March 5, 1926.
- 269,522. Dyestuffs containing chromium, Manufacture of. I.G. Farbenindustrie Akt.-Ges. April 15, 1926.
- 269,593. Gaseous olefines and liquid hydrocarbons from tars, mineral oils and similar hydrocarbons, Manufacture and production of. I.G. Farbenindustrie Akt.-Ges. April 16, 1926.
- 272,539. Destructive hydrogenation of coal, tars, mineral oil, and the like. I.G. Farbenindustrie Akt.-Ges. June 11, 1926.

- 279,797. Enriching oxide iron ores, flue dust from blast furnaces, burnt pyrites, purple ore and the like, Method of. Aktiebolaget Ferriconcentrat. October 28, 1926.
- 282,387. Stainless iron, Manufacture of. A. L. Feild. December 18, 1926.
- 282,701. Aluminium alloys. Deutsche Versuchsanstalt für Luftfahrt E. V. December 27, 1926.
- 293,717. Treating oils or fats or mixtures of the same or fatty acids for the production of sulphuric acid compounds. E. C. R. Marks. (*Chemische Fabrik Stockhausen & Cie.*) April 6, 1927.
- 293,727. Alloys of nickel and chromium, Process for the manufacture of. General Electric Co., Ltd., and C. J. Smithells. April 7, 1927.
- 293,781. N-diaryl-sulphonyl derivatives of arylamine sulphonic acids, Manufacture of. British Dyestuffs Corporation, Ltd., and A. J. Hailwood. April 12, 1927.
- 293,813. Dyeings on the fibre, Production of. K. Carpmæl and K. S. Carpmæl. (*I.G. Farbenindustrie Akt.-Ges.*) April 6, 1927.
- 293,896. Solid bodies in a finely divided state, Preparation of. British Dyestuffs Corporation, Ltd., A. J. Hailwood, and A. Shepherdson. April 11, 1927.
- 293,924. Aroylating agents, Manufacture and application of. British Dyestuffs Corporation, Ltd., H. M. Bunbury, and A. Shepherdson. April 26, 1927.
- 293,942. Dicalcium phosphate and sulphate of ammonia from phosphoric acid or its acid salts, calcium sulphate, and ammonia, Manufacture of. R. Haddan. (*E. R. Slackable.*) May 19, 1927.
- 294,002. Rubber latex, Method of treating. L. Mellersh-Jackson. (*General Rubber Co.*) August 25, 1927.
- 294,037. Oxidising ethyl alcohol. Holzverkohlungs industrie Akt. Ges., and O. Fuchs. November 14, 1927.
- 294,078. 2:3-and 2:5-dichloro-4-acetamino-1-methylbenzene and pure 2:3-and 2:5-dichloro-4-amino-1-methylbenzene, Manufacture of. O. Y. Imray. (*I.G. Farbenindustrie Akt.-Ges.*) January 24, 1928.
- 294,079. Aluminium oxide from aluminium sulphide or mixtures containing same, Method of producing. Metallbank und Metallurgische Ges. Akt.-Ges., and C. B. von Girssewald. January 27, 1928.
- 293,906. Hydrocarbons, Manufacture and production of. J. Y. Johnson. (*I.G. Farbenindustrie Akt.-Ges.*) March 10, 1927. Addition to 293,887.
- 294,092. Rendering stable the combination of 4-dimethylamino-1-phenyl-2:3-dimethyl-5-pyrazolone with butyl chloral hydrate. Soc. Chimique des Usines du Rhône and J. Altwegg. May 16, 1928.
- ### Applications for Patents
- Adcock, F., Baguley, N. G., Courtaulds, Ltd., and Wilson, D. L. Manufacture of anhydrous sodium acetate. 21,285. July 23.
- Bardt, H. Extracting halogens and precious metals from sea water. 21,719. July 26. (Germany, July 29, 1927.)
- Bardt, H. Means for preventing deposition of scale in steam boilers. 21,720. July 26. (Germany, July 29, 1927.)
- Bogdandy, S. von, and Polanyi, M. Manufacture of chlorine derivatives of organic compounds. 21,736. July 26. (Germany, August 23, 1927.)
- Callimachi, Michael Theodore, Count. Treatment of molasses, etc. 21,493. July 24.
- Clayton, R. H., and Manchester Acid Co. Purification of crude, etc., sulphur. 21,401. July 24.
- Dicker, S. G. S., and Rubber Latex Research Corporation. Concentration of latex. 21,335. July 23.
- Dreyfus, H. Treatment of cellulose materials. 21,406. July 24.
- Dreyfus, H. Manufacture of artificial filaments, etc. 21,579. July 25.
- Dreyfus, H. Treatment of cellulose derivatives. 21,778. July 27.
- Dunlop Rubber Co., Ltd., Murphy, E. A., and Twiss, D. F. Production of reversible latex compositions. 21,661. July 26.
- Du Pont de Nemours and Co., E. I. Alkylolamine salts. 21,844. July 27. (United States, August 4, 1927.)
- Du Pont de Nemours and Co., E. I. Process of dyeing textile materials. 21,845. July 27. (United States, August 4, 1927.)
- Gardiner, J. de B. W. Protective coatings for metal, etc. 21,325. July 23.
- Gasverarbeitings Ges. Production of hydrogen. 21,624. July 25. (Germany, July 26, 1927.)
- Ges. für Linde's Eismaschinen Akt.-Ges. Separation of gas mixtures. 21,635. July 26. (Germany, July 27, 1927.)
- Gyles, T. B., National Processes, Ltd. Utilisation of sulphur-bearing gases from ore-roasting operations. 21,780. July 27.
- Harrison, H. A., and Morgan, G. T. Manufacture of synthetic resins. 21,299. July 23.
- Hausen, J., and Minimax, Akt.-Ges. Fire-extinguishing materials. 21,827. July 27. (Germany, July 27, 1927.)
- Hessling, W. Preparation of agglomerated solid carbon dioxide. 21,723. July 26. (Switzerland, July 26, 1927.)
- Hessling, W. Preparation of agglomerated solid carbon dioxide. 21,724. July 26. (Switzerland, July 27, 1927.)
- Holt, F., Imperial Chemical Industries, Ltd., and Mitchell, J. A. M. W. Compositions containing alkali metal peroxides. 21,247. July 23.
- Hughes, T. Production of magnesium carbonate from magnesites. 21,728. July 26.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture and production of printers' ink. 21,278. July 23.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Conversion of salts, etc., into globular, etc. bodies. 21,279. July 23.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of magnesium cyanide, etc. 21,280. July 23.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Anthraquinone dyestuffs. 21,284. July 23.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of vulcanised rubber. 21,688. July 26.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of wetting agents, etc. 21,812. July 27.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of oxidation products from crude paraffin hydrocarbons, etc. 21,814. July 27.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of derivatives from metal carbonyls. 21,930. July 28.
- I.G. Farbenindustrie Akt.-Ges. Recovery of oils from industrial residues. 21,281. July 23.
- I.G. Farbenindustrie Akt.-Ges. Production of edible fats. 21,282. July 23.
- I.G. Farbenindustrie Akt.-Ges. Manufacture of products from cellulose derivatives. 21,301. July 23. (Germany, July 23, 1927.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of condensation products of anthraquinone. 21,594. July 25. (Germany, July 25, 1927.)
- I.G. Farbenindustrie Akt.-Ges. Treatment of hydrated cellulose. 21,595. July 25. (Germany, July 25, 1927.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of fertilisers. 21,705. July 26. (Germany, July 29, 1927.)
- I.G. Farbenindustrie Akt.-Ges. Conversion of hydrocarbons. 21,811. July 27. (Germany, September 5, 1927.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of nitrogenous condensation products. 21,813. July 27.
- I.G. Farbenindustrie Akt.-Ges. Permeable spools for artificial fibre. 21,834. July 27. (Germany, July 29, 1927.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of synthetic rubber. 21,869. July 27. (Germany, July 28, 1927.)
- Krupp Grusonwerk Akt.-Ges., F. Apparatus for separation of oil from oil-containing substances. 21,961. July 28. (Germany, September 30, 1927.)
- Leiser, H. Coating iron, etc., with chromium. 21,291. July 23. (Germany, July 21, 1927.)
- Manufacture de Machines Auxiliaires pour l'Electricité et l'Industrie. Cold extraction of fish oils. 21,793. July 27. (France, February 14.)
- Manufacture de Machines Auxiliaires pour l'Electricité et l'Industrie. Cold extraction of fish oils. 21,794. July 27. (France, June 29.)
- Naugle, J. J., and White, A. E. Re-activating, etc. carbon. 21,584. July 25.
- Norit-Vereeniging Verkoop Centrale. Manufacture of highly-activated adsorptive carbons. 21,542. July 25. (Germany, April 16.)
- Plauson, H. Manufacture of water-resistant liquid from bitumen, etc. 21,540. July 25.
- Riebeck'sche Montanwerke Akt.-Ges., A. Making purified montan wax. 21,455. July 24. (Germany, September 16, 1927.)
- Robson, S. Oxidizing catalysts. 21,559. July 25.
- Schering-Kahlbaum Akt.-Ges., and Williams, W. P. Manufacture of halogen-substituted aminobenzoic acid alkamine esters. 21,340. July 23.
- Scientific. Dry-spinning acetone solution of cellulose acetate. 21,953. July 28. (France, August 10, 1927.)
- Soc. Chimique de la Seine, and Szidon, V. Electrolytically depositing chromium. 21,936, 21,937. July 28.
- Soc. of Chemical Industry in Basle. Manufacture of dyestuffs. 21,302. July 23. (Switzerland, July 21, 1927.)
- Soc. of Chemical Industry in Basle. Manufacture of quaternary ammonium compounds. 21,703. July 26. (Switzerland, July 26, 1927.)
- Soc. of Chemical Industry in Basle. Manufacture of azo-dyestuffs, etc. 21,704. July 26. (Switzerland, July 26, 1927.)
- Soc. of Chemical Industry in Basle. Manufacture of azo-dyestuffs. 21,831. July 27. (Switzerland, July 30, 1927.)
- Spiecker, F. W., Weingand, R., and Wolf, and Co. Decreasing permeability to liquid of cellulose-ester lacquers. 21,862. July 27. (Germany, April 3.)
- Toyot, L. U. de. Apparatus for production of producer gas. 21,949. July 28.
- Wessel, C. Distillation of coal tar. 21,432. July 24.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.
 ACID BORIC, COMMERCIAL.—Crystal, £30 per ton; powder, £32 per ton; extra fine powder, £34 per ton.
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.
 ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.
 BISULPHITE OF LIME.—£7 10s. per ton, f.o.r. London, packages extra.
 BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.
 BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags carriage paid any station in Great Britain.)
 CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.
 COPPER SULPHATE.—£25 to £25 10s. per ton.
 METHYLATED SPIRIT 61 O.P.—Industrial, 1s. 3d. to 1s. 8d. per gall.; pyridinised industrial, 1s. 5d. to 1s. 10d. per gall.; mineralised, 2s. 4d. to 2s. 8d. per gall.; 64 O.P., 1d. extra in all cases.
 NICKEL SULPHATE.—£38 per ton d/d.
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.
 POTASH CAUSTIC.—£30 to £33 per ton.
 POTASSIUM BICHROMATE.—4½d. per lb.
 POTASSIUM CHLORATE.—3½d. per lb., ex wharf, London, in cwt. kegs.
 SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.
 SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.
 SODIUM ACETATE 97/98%.—£21 per ton.
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.
 SODIUM BICHROMATE.—3½d. per lb.
 SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton delivered for home market, 1-cwt. drums included; £15 10s. f.o.r. London.
 SODIUM CHLORATE.—2½d. per lb.
 SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.
 SODIUM PHOSPHATE.—£14 per ton, f.o.b. London, casks free.
 SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.
 SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.b. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—6½d. to 6¾d. per lb. Crude 60's, 2s. 2d. to 2s. 2½d. per gall. prompt.
 ACID CRESYLIC 99/100.—2s. 7d. to 3s. per gall. 97/99.—2s. 6d. to 2s. 7d. per gall. Pale, 95%, 2s. 4d. to 2s. 5d. per gall. Dark, 2s. 1d. to 2s. 2d.
 ANTHRACENE.—A quality, 2½d. per unit. 40%, £5 per ton.
 ANTHRACENE OIL, STRAINED.—8d. to 8½d. per gall. Unstrained, 7½d. to 8d. per gall.
 BENZOLE.—Prices at works: Crude, 10½d. to 11d. per gall.; Standard Motor, 1s. 4½d. to 1s. 5d. per gall.; 90%, 1s. 7d. to 1s. 8d. per gall.; Pure, 1s. 10d. to 1s. 11d. per gall.
 TOLUOLE.—90%, 1s. 6d. to 2s. per gall. Firm. Pure, 2s. 2d. per gall.
 XYLOL.—1s. 3d. to 1s. 11d. per gall. Pure, 1s. 6d. to 1s. 7d. per gall.
 CREOSOTE.—Cresylic, 20/24%, 9d. per gall.; middle oil, 7d. to 8d. per gall. Heavy, 7½d. to 8½d. per gall. Standard specification, 6½d. to 6¾d. ex works. Salty, 7½d. per gall.
 NAPHTHA.—Crude, 8½d. to 9d. per gall. Solvent 90/160, 1s. 1½d. to 1s. 2½d. per gall. Solvent 95/160, 1s. 2d. to 1s. 7d. per gall. Solvent 90/190, 11d. to 1s. 4d. per gall.
 NAPHTHALENE CRUDE.—Drained Creosote Salts, £5 per ton. Whizzed, £8 per ton. Hot pressed, £8 10s. to £9 per ton.
 NAPHTHALENE.—Crystals, £13 to £14 10s. per ton. Quiet. Flaked, £14 to £15 per ton, according to districts.
 PITCH.—Medium soft, 50s. to 57s. 6d. per ton, f.o.b., according to district. Nominal.
 PYRIDINE.—90/140, 5s. to 6s. per gall. 90/180, 3s. to 4s. per gall. Heavy, 2s. 6d. to 3s. per gall.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:
 ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.
 ACID ANTHRANILIC.—6s. per lb. 100%.
 ACID BENZOIC.—1s. 8½d. per lb.
 ACID GAMMA.—4s. 6d. per lb.
 ACID H.—3s. per lb.
 ACID NAPHTHIONIC.—1s. 6d. per lb.
 ACID NEVILLE AND WINTHER.—4s. 9d. per lb.
 ACID SULPHANILIC.—8½d. per lb.
 ANILINE OIL.—8d. per lb. naked at works.
 ANILINE SALTS.—8d. per lb. naked at works.
 BENZALDEHYDE.—2s. 3d. per lb.
 BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.
 BENZOIC ACID.—1s. 8½d. per lb.
 o-CRESOL 29/31° C.—5½d. per lb.
 m-CRESOL 98/100%.—2s. 3d. to 2s. 6d. per lb.
 p-CRESOL 32/34° C.—2s. 3d. to 2s. 6d. per lb.
 DICHLORANILINE.—2s. per lb.
 DIMETHYLANILINE.—1s. 11d. per lb.
 DINITROBENZENE.—8½d. per lb. naked at works. £75 per ton.
 DINITROCHLOROBENZENE.—£84 per ton d/d.
 DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.
 DIPHENYLAMINE.—2s. 10d. per lb. d/d.
 a-NAPHTHOL.—2s. per lb. d/d.
 B-NAPHTHOL.—10d. per lb. d/d.
 a-NAPHTHYLAMINE.—1s. 3d. per lb.
 B-NAPHTHYLAMINE.—3s. per lb.
 o-NITRANILINE.—5s. 9d. per lb.
 m-NITRANILINE.—3s. per lb. d/d.
 p-NITRANILINE.—1s. 8d. per lb.
 NITROBENZENE.—6d. per lb. naked at works.
 NITRONAPHTHALENE.—1s. 3d. per lb.
 R. SALT.—2s. 2d. per lb.
 SODIUM NAPHTHONATE.—1s. 8½d. per lb. 100% basis d/d.
 o-TOLUIDINE.—8d. per lb.
 p-TOLUIDINE.—1s. 10d. per lb. naked at works.
 m-XYLIDINE ACETATE.—2s. 6d. per lb. 100%.
 N. W. ACID.—4s. 9d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £10 5s. per ton. Good demand.
 Grey, £14 10s. to £15 per ton. Liquor, 9d. per gall.
 CHARCOAL.—£6 to £9 per ton, according to grade and locality. Foreign competition severe.
 IRON LIQUOR.—1s. 3d. per gall, 32° Tw. 1s. per gall. 24° Tw.
 RED LIQUOR.—9d. to 10d. per gall.
 WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.
 WOOD NAPHTHA, MISCIBLE.—3s. 11d. to 4s. 3d. per gall. Solvent, 4s. 3d. per gall.
 WOOD TAR.—£4 to £5 per ton.
 BROWN SUGAR OF LEAD.—£40 15s. per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6½d. to 1s. 5½d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.
 ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.
 BARYTES.—£3 10s. to £6 15s. per ton, according to quality.
 CADMIUM SULPHIDE.—2s. 6d. to 2s. 9d. per lb.
 CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.
 CARBON BLACK.—5½d. per lb., ex wharf.
 CARBON TETRACHLORIDE.—£45 to £50 per ton, according to quantity. drums extra.
 CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.
 DIPHENYLGUANIDINE.—3s. 9d. per lb.
 INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.
 LAMP BLACK.—£35 per ton, barrels free.
 LEAD HYPOSULPHITE.—9d. per lb.
 LITHOPHON, 30%.—£22 10s. per ton.
 MINERAL RUBBER "RUBPRON".—£13 12s. 6d. per ton, f.o.r. London.
 SULPHUR.—£9 to £11 per ton, according to quality.
 SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.
 SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.
 THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb., carriage paid.
 THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.
 VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.
 ZINC SULPHUR.—1s. per lb.

Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.
 ACID, ACETYL SALICYLIC.—2s. 6d. to 2s. 8d. per lb.
 ACID, BENZOIC, B.P.—2s. to 3s. 3d. per lb., according to quantity. Solely ex Gum, 1s. 3d. to 1s. 4d. per oz., according to quantity.

ACID, BORIC B.P.—Crystal, 36s. to 39s. per cwt.; powder, 40s. to 43s. per cwt.; extra fine powder, 42s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.

ACID, CAMPHORIC.—19s. to 21s. per lb.

ACID, CITRIC.—1s. 10½d. to 1s. 11d. per lb. Less 5%.

ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.

ACID, PYROGALLIC, CRYSTALS.—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.

ACID, SALICYLIC, B.P. PULV.—1s. 5d. to 1s. 6d. per lb. Technical.—10½d. to 11½d. per lb.

ACID, TANNIC B.P.—2s. 8d. to 2s. 10d. per lb.

ACID, TARTARIC.—1s. 4½d. to 1s. 5d. per lb., less 5%.

ACETANILIDE.—1s. 5d. to 1s. 8d. per lb. for quantities.

AMIDOL.—7s. 6d. to 9s. per lb., d/d.

AMIDOPYRIN.—8s. to 8s. 3d. per lb.

AMMONIUM BENZOATE.—3s. 3d. to 3s. 6d. per lb., according to quantity. 18s. per lb. ex Gum.

AMMONIUM CARBONATE B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimed, 1s. per lb.

ATROPINE SULPHATE.—9s. per oz.

BARBITONE.—5s. 9d. to 6s. per lb.

BENZONAPHTHOL.—3s. 3d. per lb. spot.

BISMUTH CARBONATE.—9s. 9d. per lb.

BISMUTH CITRATE.—9s. 3d. per lb.

BISMUTH SALICYLATE.—8s. 9d. per lb.

BISMUTH SUBNITRATE.—8s. 3d. per lb.

BISMUTH NITRATE.—Cryst. 5s. 9d. per lb.

BISMUTH OXIDE.—12s. 3d. per lb.

BISMUTH SUBCHLORIDE.—10s. 9d. per lb.

BISMUTH SUBGALLATE.—7s. 9d. per lb. Extra and reduced prices for smaller and larger quantities of all bismuth salts respectively.

BISMUTH ET AMMON LIQUOR.—Cit. B.P. in W. Qts. 1s. 0½d. per lb.; 12 W. Qts. 11½d. per lb.; 36 W. Qts., 11d. per lb.

BORAX B.P.—Crystal, 24s. to 27s. per cwt.; powder, 25s. to 28s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.

BROMIDES.—Ammonium, 2s. 1d. to 2s. 3d. per lb.; potassium, 1s. 0½d. to 1s. 11d. per lb.; sodium, 2s. to 2s. 2d. per lb.; granulated, ½d. per lb. less; all spot. Large quantities at lower rates.

CALCIUM LACTATE.—B.P., 1s. 2d. to 1s. 4d. per lb.

CAMPHOR.—Refined flowers, 2s. 11d. to 3s. per lb., according to quantity; also special contract prices.

CHLORAL HYDRATE.—3s. 2d. to 3s. 4d. per lb.

CHLOROFORM.—2s. 4½d. to 2s. 7½d. per lb., according to quantity.

CREOSOTE CARBONATE.—6s. per lb.

ETHERS.—S.G. 730—11d. to 1s. 0d. per lb., according to quantity; other gravities at proportionate prices.

FORMALDEHYDE.—£39 per ton, in barrels ex wharf.

GUAIACOL CARBONATE.—4s. 9d. to 5s. per lb.

HEXAMINE.—2s. 3d. to 2s. 6d. per lb.

HOMATROPINE HYDROBROMIDE.—30s. per oz.

HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.

HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked. Winchesters, 2s. 11d. per gall. B.P., 10 vols., 2s. to 2s. 3d. per gall.; 20 vols., 4s. per gall.

HYDROQUINONE.—3s. 9d. to 4s. per lb., in cwt. lots.

HYPOPHOSPHITES.—Calcium, 3s. 6d. per lb., for 28 lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.

IRON AMMONIUM CITRATE.—B.P., 2s. 6d. to 2s. 9d. per lb. Green, 2s. 9d. to 3s. 2d. per lb.; U.S.P., 2s. 7d. to 2s. 10d. per lb.

IRON PERCHLORIDE.—18s. to 20s. per cwt., according to quantity.

IRON QUININE CITRATE.—B.P., 8½d. to 9½d. per oz.

MAGNESIUM CARBONATE.—Light commercial, £31 per ton net.

MAGNESIUM OXIDE.—Light commercial, £62 10s. per ton, less 2½%; Heavy commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.

MENTHOL.—A.B.R. recrystallised B.P., 22s. per lb. net for January delivery; Synthetic, 9s. to 10s. per lb.; Synthetic detached crystals, 9s. to 12s. 6d. per lb., according to quantity; Liquid (95%), 9s. 6d. per lb.

MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d. per lb., levig., 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 9d. to 5s. 10d. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s. 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 10d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 10d. to 5s. 11d. per lb. Special prices for larger quantities.

METHYL SALICYLATE.—1s. 5d. to 1s. 9d. per lb.

METHYL SULPHONAL.—9s. to 9s. 3d. per lb.

METOL.—9s. to 11s. 6d. per lb. British make.

PARAFORMALDEHYDE.—1s. 9d. per lb. for 100% powder.

PARALDEHYDE.—1s. 1d. to 1s. 4d. per lb.

PHENACETIN.—2s. 6d. to 2s. 9d. per lb.

PHENAZONE.—4s. to 4s. 3d. per lb.

PHENOLPHTHALEIN.—6s. to 6s. 3d. per lb.

POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—98s. per cwt., less 2½ per cent.

POTASSIUM CITRATE.—B.P.C., 2s. 4d. to 2s. 7d. per lb.; U.S.P., 2s. 3d. to 2s. 6d. per lb.

POTASSIUM FERRICYANIDE.—1s. 9d. per lb., in cwt. lots.

POTASSIUM IODIDE.—16s. 8d. to 17s. 2d. per lb., according to quantity.

POTASSIUM METABISULPHITE.—6d. per lb., 1-cwt. kegs included, f.o.r. London.

POTASSIUM PERMANGANATE.—B.P. crystals, 5½d. per lb., spot.

QUININE SULPHATE.—1s. 8d. to 1s. 9d. per oz., bulk in 100 oz. tins.

RESORCIN.—2s. 10d. to 3s. per lb., spot.

SACCHARIN.—47s. per lb.; in quantity lower.

SALOL.—2s. 4d. per lb.

SODIUM BENZOATE, B.P.—1s. 8d. to 1s. 11d. per lb.

SODIUM CITRATE, B.P.C., 1911—2s. 1d. to 2s. 4d. per lb., B.P.C. 1923—2s. 5d. to 2s. 6d. per lb. U.S.P., 2s. 4d. to 2s. 7d. per lb., according to quantity.

SODIUM FERROCYANIDE.—4d. per lb., carriage paid.

SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 per ton, d/d consignee's station in 1-cwt. kegs.

SODIUM NITROPRUSSIDE.—16s. per lb.

SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—95s. to 100s. per cwt. Crystals, 4s. per cwt. extra.

SODIUM SALICYLATE.—Powder, 1s. 6d. to 1s. 9d. per lb. Crystal, 1s. 8d. to 1s. 10d. per lb.

SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 1d. per lb.

SODIUM SULPHITE, ANHYDROUS.—£27 10s. to £28 10s. per ton, according to quantity. Delivered U.K.

SULPHONAL.—6s. 9d. to 7s. per lb.

TARTAR EMETIC, B.P.—Crystal or powder, 2s. 1d. to 2s. 2d. per lb.

THYMOL.—Puriss., 9s. 6d. to 9s. 9d. per lb., according to quantity. Firmer. Natural, 14s. 3d. per lb.

Perfumery Chemicals

ACETOPHENONE.—7s. per lb.

AUBEPINE (EX ANETHOL).—10s. per lb.

AMYL ACETATE.—2s. 6d. per lb.

AMYL BUTYRATE.—4s. 9d. per lb.

AMYL SALICYLATE.—2s. 9d. per lb.

ANETHOL (M.P. 21/22° C.).—5s. 3d. per lb.

BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—2s. per lb.

BENZYL ALCOHOL FREE FROM CHLORINE.—2s. per lb.

BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.

BENZYL BENZOATE.—2s. 6d. per lb.

CINNAMIC ALDEHYDE NATURAL.—15s. 6d. per lb.

COUMARIN.—9s. 6d. per lb.

CITRONELLOL.—13s. 6d. per lb.

CITRAL.—8s. 3d. per lb.

ETHYL CINNAMATE.—6s. per lb.

ETHYL PHTHALATE.—2s. 6d. per lb.

EUGENOL.—10s. 6d. per lb.

GERANIOL (PALMAROSA).—23s. per lb.

GERANIOL.—6s. 6d. to 11s. per lb.

HELIOTROPINE.—4s. 6d. per lb.

ISO EUGENOL.—14s. 6d. per lb.

LINALOL.—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb.

LINALYL ACETATE.—Ex Shui Oil, 14s. 6d. per lb. Ex Bois de Rose, 18s. 6d. per lb.

METHYL ANTHRANILATE.—8s. 6d. per lb.

METHYL BENZOATE.—4s. per lb.

MUSK KETONE.—35s. per lb.

MUSK XYLOL.—7s. per lb.

NEROLIN.—3s. 6d. per lb.

PHENYL ETHYL ACETATE.—11s. per lb.

PHENYL ETHYL ALCOHOL.—10s. 6d. per lb.

RHODINOL.—38s. per lb.

SAFROL.—1s. 6d. per lb.

TERPINEOL.—1s. 6d. per lb.

VANILLIN.—16s. 6d. per lb.

Essential Oils

ALMOND OIL.—Foreign S.P.A., 10s. 6d. per lb.

ANISE OIL.—2s. 9d. per lb.

BERGAMOT OIL.—26s. per lb.

BOURBON GERANIUM OIL.—20s. per lb.

CAMPHOR OIL.—9d. per lb.

CANANGA OIL, JAVA.—12s. per lb.

CINNAMON OIL LEAF.—6s. 9d. per oz.

CASSIA OIL, 80/85%.—7s. 6d. per lb.

CITRONELLA OIL.—Java, 2s. per lb., c.i.f. U.K. port. Ceylon, pure, 1s. 10d. per lb.

CLOVE OIL (PURE 90/92%).—7s. 3d. per lb.

EUCALYPTUS OIL, AUSTRALIAN, B.P. 70/75%.—2s. 1d. per lb.

LAVENDER OIL.—Mont Blanc, 48/50%, Esters, 15s. 9d. per lb.

LEMON OIL.—13s. per lb.

LEMONGRASS OIL.—4s. 3d. per lb.

ORANGE OIL, SWEET.—30s. per lb.

OTTO OF ROSE OIL.—Anatolian, 35s. per oz. Bulgarian, 75s. per oz.

PALMA ROSA OIL.—13s. 9d. per lb.

PEPPERMINT OIL.—Wayne County, 14s. 6d. per lb.; Japanese, 8s. 3d. per lb.

PETITGRAIN.—7s. 3d. per lb. Sandalwood, Mysore, 26s. 6d. per lb., 90/95%, 16s. 6d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, August 2, 1928.

BUSINESS this week has been a little brighter, and prices continue generally firm. The improvement in export trade has continued.

General Chemicals

ACETONE is in good demand at £65-£67 per ton, position firm.
ACETIC ACID is unchanged at Convention prices.
ACID FORMIC is unchanged at £47 per ton, for 85%, with an improved demand.
ACID LACTIC is unchanged.
ACID OXALIC is very firm at £31 to £33 per ton.
ACID TARTARIC.—The demand is poor. Prices remain at about 1s. 4d. lb.
AMMONIUM CHLORIDE is unchanged.
ALUMINA SULPHATE.—The demand is well maintained. The manufacturers are fully sold. Price unchanged at £6 10s. per ton for the 17/18 %.
ARSENIC is unchanged.
CHLORIDE OF BARIUM is in extremely short supply, with a good demand at £9 10s. per ton, ex store.
COPPER SULPHATE is unchanged.
CREAM OF TARTAR.—The demand is rather poor at £100 per ton, less 2½%, for 99/100%, B.P.
FORMALDEHYDE.—The demand continues. Price unchanged at £39 10s. to £40 10s. for 40% by volume.
LEAD ACETATE is unchanged at £42 10s. and £41 per ton for white and brown respectively.
LEAD NITRATE is unchanged at £37 per ton.
LIME ACETATE is in good demand, and prices unchanged.
METHYL ACETONE.—Business quiet at £56-£58 per ton, for 45%.
POTASSIUM CARBONATE unchanged.

POTASSIUM CHLORATE is in fair demand at £28 per ton with a firm position.

PERMANGANATE OF POTASH.—There is a steady inquiry at 5½d. per lb. for the B.P. Commercial ½d. per lb. less.

POTASSIUM PRUSSATE is unchanged at £63 10s. to £65 10s. per ton. SODIUM ACETATE is still short, and prices exceedingly firm at £21 to £22 per ton. The demand continues active.

SODIUM PHOSPHATE is unchanged.

SODIUM PRUSSATE is firm at 4½d. to 5d. per lb. according to quantity. SULPHIDE OF SODIUM is unchanged.

TARTAR EMETIC.—The demand continues, and makers are well sold. The position is firm at 11½d. per lb.

ZINC SULPHATE is unchanged at £12 per ton.

Coal Tar Products

THE market for coal tar products is fairly quiet, as may be expected, owing to the coming vacation.

MOTOR BENZOL remains at about 1s. 4d. per gallon, on rails.

SOLVENT NAPHTHA remains weaker at about 1s. 1d. to 1s. 1½d. per gallon, on rails.

HEAVY NAPHTHA is unchanged, at 1s. 1d. to 1s. 2d. per gallon on rails.

CREOSOTE is quoted at about 6½d. per gallon on rails in the North, and 6¾d. per gallon in London.

CRESYLIC ACID is weaker, and larger quantities are being offered. Although the 98 100% quality is quoted at 2s. 4d. per gallon, f.o.b., we believe business could be done at less. The dark quality, 95 97%, can still be bought at 1s. 10d. per gallon, f.o.b. naked.

NAPHTHALENE is unchanged, the 74/76 quality being quoted at £5 per ton, and the 76/78 quality at £6 to £6 10s. per ton.

PITCH.—There is no change to report and the market remains quiet with little business passing. To-day's value is approximately 60s. per ton f.o.b. U.K. port.

Latest Oil Prices

LONDON, August 1.—LINSEED OIL quiet and 2s. 6d. to 5s. per ton lower. Spot, ex-mill, £28 10s.; August, £27 10s.; September-December, £27 15s.; January-April, £28 5s.; and May-August, £28 15s. RAPE OIL slow. Crude extracted, £41; technical refined, £43. naked, ex wharf. COTTON OIL inactive. Egyptian crude, £33 10s.; refined common edible, £39; and deodorised, £41. naked, ex mill. TURPENTINE quiet. American spot, 42s. 6d.; and September-December, 43s. 6d. per cwt.

HULL, August 1.—LINSEED OIL.—Spot to August, £27; September-December, £27 17s. 6d.; January-April, £28 10s. per ton, naked. COTTON OIL.—Bombay crude, £26 10s.; Egyptian crude, £31 5s.; edible refined, £36; technical, £34 10s.; deodorised, £38 per ton, naked. PALM KERNEL OIL.—Crushed, 5½ per cent., £38 per ton, naked. GROUNDNUT OIL.—Crushed/extracted, £39; deodorised, £43 per ton. SOYA OIL.—Extracted and crushed, £32 10s.; deodorised, £36 per ton. RAPE OIL.—Crude/extracted, £40 15s.; refined, £42 15s. per ton, net cash terms, ex mills. TURPENTINE, CASTOR OIL, and COD OIL unchanged.

South Wales By-Products

SLIGHTLY more business has been done in South Wales by-products, but business generally is still quiet and buying is confined to immediate requirements. The demand for pitch has strengthened, but the price remains unchanged at from 55s. to 60s. per ton, delivered. Refined tars have a moderately strong demand, prices being (coke oven tar) from 7½d. to 8d. per gallon delivered, and gasworks tar at from 7½d. to 7¾d. per gallon delivered. Crude tar is unchanged at from 55s. to 60s. per ton, f.o.r. maker's works. There has been a better inquiry for light and heavy naphthas, but very little business appears to have materialised. Heavy naphtha continues to change hands round about 1s. to 1s. 1d. per gallon, f.o.r. maker's works, while solvent has increased to 1s. 1d. to 1s. 1½d. per gallon, f.o.r. maker's works. Whizzed naphthalene is unchanged at about 90s. per ton, f.o.r. makers' works, and crude is also unchanged round 80s. per ton, f.o.r. makers' works. Patent fuel and coke exports continue slow, and it is unlikely that there will be any real improvement until the beginning of September.

IMPORTS OF CHEMICALS and chemical preparations into Calcutta in the official year 1927-28 amounted in value to Rs.96,44,702 (1.15 per cent. of the total imports), as compared with Rs.93,77,477 in 1926-27 and Rs.79,78,654 in 1925-26.

EXPORTS OF INDIGO from India during April amounted to 40 cwt., as compared with 79 cwt. in 1927 and 129 cwt. in 1926. Total exports in the period January-April, 1928, amounted to 503 cwt., as compared with 512 cwt. in 1927 and 979 cwt. in 1926.

Nitrogen Products: New Sulphate Prices

Export.—During the week a moderate amount of business has been reported at about £9 3s. 6d. per ton, f.o.b. U.K. port in single bags. It is understood that the demand continues good in extra European territories, but on the Continent it is at the moment a little sluggish.

Home.—On July 31 home prices for the new season were announced as follows:—

1928.				1929.			
	£	s.	d.		£	s.	d.
August	10	0	0	January	10	11	0
September	10	0	0	February	10	13	0
October	10	2	0	March	10	13	0
November	10	5	0	April	10	13	0
December	10	8	0	May/June	10	13	0

per ton for neutral quality basis 20-6% nitrogen (no charge if over, pro rata allowance if under), delivered in bags to consumer's nearest station in 6-ton lots. British producers have made no alteration in their terms of sale. Except for the month of August these prices are the same as those in operation last year. Apparently, during the year 1927-8 producers discovered that the demand for sulphate of ammonia was extending sufficiently to absorb the increased production. In view of the export prices announced previously by the German Nitrogen Syndicate, it was hardly expected that the home prices would show any marked divergence from those of last year.

Nitrate of Soda.—The nitrate market continues quiet pending announcement of producers' arrangements for future sales. At the moment the price f.a.s. Chile remains at 16s. 4d. per metric quintal, but the amount of business transacted is small.

New By-Product Coke Plant at Montreal

THE new coke plant of the Montreal Coke and Manufacturing Co., Ltd., a subsidiary of Montreal Light, Heat and Power Consolidated, is now in operation, and, it is said, will have an annual capacity of 250,000 tons of high-grade coke, 6,500,000,000 cubic feet of gas, 3,500,000 gallons of tar and 10,000,000 pounds of ammonium sulphate. The new plant adjoins the Montreal Power Co.'s gas plant at Ville La Salle, near Montreal. It has a battery of 59 Koppers coke ovens and a by-product plant for the recovery of tar and ammonium sulphate. About half a million tons of coal will be used in the plant each year. Its gas output will be sold through the mains of the Montreal Power Co. and its 250,000 tons of by-product coke are expected to find a ready market.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinion.

Glasgow, August 1, 1928.

THE Scottish heavy chemical market remains quiet, and there is no change of any importance to record.

Industrial Chemicals

- ACETONE, B.G.S.—£64 to £67 per ton, ex store, according to quantity.
- ACID ACETIC, 98/100%.—Glacial, £56 to £67 per ton, according to quality and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.
- ACID BORIC.—Crystals, granulated or small flakes, £30 per ton. Powder, £32 per ton, packed in bags, carriage paid U.K. stations.
- ACID CARBOLIC ICE CRYSTALS.—Quoted 6½d. per lb., delivered or f.o.b. U.K. ports.
- ACID CITRIC, B.P.—Offered for spot delivery at 1s. 11d. per lb., less 5%, ex store. Quoted 1s. 10½d. per lb., less 5%, ex wharf, to come forward.
- ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. per carboy. Dearsenicated quality, 5s. 6d. per carboy, ex works, full wagon loads.
- ACID NITRIC.—80% quality, £24 10s., per ton, ex station, full truck loads.
- ACID OXALIC, 98/100%.—On offer from the Continent at 3½d. per lb., ex wharf. Spot material quoted 3½d. per lb., ex store. In better demand.
- ACID SULPHURIC.—£2 15s. per ton, ex works, for 144° quality. £5 15s. per ton for 168° quality. Dearsenicated quality, 20s. per ton extra.
- ACID TARTARIC, B.P. CRYSTALS.—Quoted 1s. 4½d. per lb., less 5%, ex wharf, but this price could probably be shaded.
- ALUMINA SULPHATE.—On offer at £5 10s. per ton, c.i.f. U.K. ports. Spot material quoted £5 15s. per ton, ex store.
- ALUM, LUMP POTASH.—Quoted £8 7s. 6d. per ton, c.i.f. U.K. ports, prompt shipment from the Continent. Crystal meal quoted £8 10s. per ton, ex store.
- AMMONIA, ANHYDROUS.—Quoted 9½d. per lb. carriage paid. Containers extra and returnable.
- AMMONIA CARBONATE.—Lump £37 per ton; powdered £39 per ton, packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.
- AMMONIA LIQUID, 880°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.
- AMMONIA MURIATE.—Grey galvanisers' crystals of British manufacture quoted £21 to £22 per ton, ex station. Fine white crystals offered from the continent at about £17 5s. per ton, c.i.f. U.K. ports.
- ANTIMONY OXIDE, 98/100%.—Spot material available at about £44 per ton, ex store, but considerably cheaper prices are quoted for prompt shipment.
- ARSENIC, WHITE POWDERED.—On offer for prompt despatch from mines at £19 per ton, ex wharf. Spot material quoted £20 per ton, ex store.
- BARIUM CARBONATE, 98/100%.—English material on offer at £7 5s. per ton, ex store. Continental quoted £7 per ton, c.i.f. U.K. ports.
- BARIUM CHLORIDE.—Still scarce for spot delivery and price round about £9 per ton, ex store named. Offered from the continent about £7 15s. per ton, c.i.f. U.K. ports.
- BLEACHING POWDER.—British manufacturers' contract price to consumers £6 12s. 6d. per ton, delivered, minimum four-ton lots. Continental on offer at £6 10s. per ton, ex wharf.
- CALCIUM CHLORIDE.—British manufacturers' price £4 5s. to £4 15s. per ton, according to quantity and point of delivery. Continental material on offer at £3 12s. 6d. per ton, c.i.f. U.K. ports.
- COPPERAS GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works or £4 12s. 6d. per ton, f.o.b. U.K. ports for export.
- COPPER SULPHATE.—Now on offer from the continent at about £23 15s. per ton, c.i.f. U.K. ports, but spot parcels of British material offered at about £23 per ton, ex store.
- FORMALDEHYDE, 40%.—Quoted £35 10s. per ton, c.i.f. U.K. ports. Spot material on offer at £38 per ton, ex store.
- GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental quoted £2 15s. per ton, c.i.f. U.K. ports.
- LEAD, RED.—Imported material on offer at £31 per ton, ex store.
- LEAD, WHITE.—£35 15s. to £37 per ton, c.i.f. U.K. ports.
- LEAD ACETATE.—White crystals quoted £41 15s. per ton, ex store. Brown on offer at about £40 per ton, ex store.
- MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.
- METHYLATED SPIRIT.—Industrial quality, 64 O.P., now quoted 1s. 4d. per gallon, less 2% delivered.
- POTASSIUM BICHROMATE.—4½d. per lb., delivered, minimum 4-ton lots. Under 4-ton lots ½d. per lb. extra.
- POTASSIUM CARBONATE, 96/98%.—Quoted £25 10s. per ton, c.i.f. U.K. ports. Crystals, 30s. per ton extra. B.P. quality crystals or powder offered at £32 per ton, c.i.f. U.K. ports.
- POTASSIUM CHLORATE.—99/100% powder rather cheaper and price named from Continent now about £22 15s. per ton, c.i.f. U.K. ports. Crystals, 20s. per ton extra.
- POTASSIUM NITRATE.—Refined granulated quality £19 2s. 6d. per ton, c.i.f. U.K. ports. Spot material on offer at about £20 10s. per ton, ex store.
- POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 5½d. per lb., ex wharf.
- POTASSIUM PRUSSATE (YELLOW).—Rather scarcer for spot delivery and now 6½d. per lb., ex store. Offered from the Continent at 6½d. per lb., ex wharf, prompt shipment.
- SODA CAUSTIC.—Powdered, 98/99%, £17 17s. 6d. per ton; solid, 76/77%, £14 10s. per ton; and 70/72%, £13 12s. 6d. per ton, minimum 4-ton lots carriage paid on contract. Spot material 10s. per ton extra.
- SODIUM ACETATE.—Spot material on offer at about £22 per ton, ex store.
- SODIUM BICARBONATE.—Refined recrystallised, £10 10s. per ton, ex quay or station. M.W. quality, 30s. per ton less.
- SODIUM BICHROMATE.—Quoted 3d. per lb., delivered buyers' works; minimum 4-ton lots. Under 4 and over 2 ton lots, ½d. per lb. extra. Under 2-ton lots, 3½d. per lb.
- SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station. Powdered or pea quality, 27s. 6d. per ton extra. Light soda ash, £7 3s. 9d. per ton, ex quay; minimum 4-ton lots with various reductions for contract.
- SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £8 17s. 6d. per ton, ex station; minimum 4-ton lots. Pea crystals on offer at £14 15s. per ton, ex station; minimum 4-ton lots.
- SODIUM NITRATE.—Quoted £11 per ton, ex store.
- SODIUM NITRITE, 100%.—Quoted £19 10s. per ton, ex store.
- SODIUM PRUSSATE.—In moderate demand. Spot material quoted 4½d. per lb., ex store.
- SODIUM SULPHATE (SALTCAKE).—Prices, 50s. per ton, ex works; 52s. 6d. per ton delivered for unground quality. Ground quality, 2s. 6d. per ton extra.
- SODIUM SULPHIDE.—Prices for home consumption:—solid, 60/62%, £9 per ton; broken, 60/62%, £10 per ton; crystals, 30/32%, £7 2s. 6d. per ton, delivered. Buyers' works on contract; minimum 4-ton lots. Special prices for some consumers. Spot material, 5s. per ton extra.
- SULPHUR.—Flowers, £12 per ton; roll, £10 15s. per ton; rock, £10 12s. 6d. per ton; ground American, £9 5s. per ton; ex store. Prices nominal.
- ZINC CHLORIDE.—British material, 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100%, solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports. Powdered, 20s. per ton extra.
- ZINC SULPHATE.—Quoted £11 per ton, ex wharf, prompt shipment from the Continent.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

British Patents in China

A WELCOME concession has been obtained from the Chinese Authorities as a result of representations made to H.M. Government by the Federation of British Industries and other organisations drawing attention to the difficulties experienced by British firms in effecting registration of their patents in China under the provisional Chinese regulations, owing to the fact that, while specifications are required in the Chinese language, there are many English words of a technical nature which it is quite impossible to translate into Chinese. The Federation has now received advice that the head of the Chinese Bureau of Patents has agreed that specifications may be lodged in English, but that such specifications must be accompanied by Chinese translations or, at any rate, by an explanation in Chinese giving the gist of the English text as far as possible. It was further agreed that in all cases the specification in English should, for purpose of registration, be the ruling text.

Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, August 2, 1928.

THE approach of the August Bank Holiday break has not been without its usual effect on business in chemical products on this market. Trade during the past week has been noticeably slackener than before, both for prompt delivery and on contract account. In the former case, parcels that have changed hands have been of limited weight, whilst deliveries against contracts have in many instances been temporarily suspended. Another quiet period is expected next week, but after then there should be a gradual recovery after the seasonal quietness that has been ruling during the past month or so.

Heavy Chemicals

The call for sulphide of sodium is of moderate extent and the tendency of prices seems to be towards slightly lower levels, the commercial grade selling at from £7 10s. to £8 per ton, and the 60-65 per cent. concentrated solid at round £9 15s. Chlorate of soda is in quiet request but there has been little change in values, current offers varying from 2½d. to 3d. per lb. There is some inquiry about for hyposulphite of soda, with the commercial quality obtainable at £9 5s. per ton and the photographic at about £15 10s. Saltcake continues to be offered here on the basis of £2 12s. 6d. per ton, but buying interest in this section is still somewhat slow. Caustic soda is relatively active, with contract offers ranging from £13 7s. 6d. to £15 7s. 6d. per ton, according to quality. Current offers of bichromate of soda are at round 3d. per lb., and a quietly steady business is being put through. Bicarbonate of soda is in moderate request and offers are fully maintained on the basis of £10 10s. per ton. A certain amount of easiness is still to be observed in the case of bleaching powder, offers of this material during the week having been at £6 15s. to £7 per ton. Alkali is moving in fair quantities and quotations are well held at about £6 2s. 6d. per ton. Prussiate of soda has not been particularly active but prices are maintained at from 4½d. to 5½d. per lb., according to quantity. Phosphate of soda is being quoted here at up to £12 10s. per ton but without attracting very much attention from buyers.

Chlorate of potash has been in rather limited demand, though at round 3d. per lb. values show little actual change on the week. Permanganate of potash is on the quiet side, but prices are fairly steady at the moment at about 5d. per lb. for the B.P. quality and 4½d. per lb. for the commercial. Bichromate of potash has met with some inquiry at from 4d. to 4½d. per lb. Although the demand for caustic potash just now is not too brisk, quotations are fairly firm at from £33 5s. per ton for prompt delivery of one to five-ton lots. Yellow prussiate of potash is steady and in fair request at from 6½d. to 7½d. per lb., according to quantity. Current offers of carbonate of potash range from £25 to £25 10s. per ton.

There has been little change in the market position of arsenic; white powdered, Cornish make, is selling in small quantities at round £17 per ton, at the mines. Sulphate of copper is only in moderate demand at the moment but prices are fairly steady at £26 per ton. Acetate of lime shows little sign of giving way, brown material being quoted this week at round £9 10s. per ton and grey at £16 5s. Acetate of lead is quiet but about unchanged at £39 per ton for brown and £40 to £41 for white. Nitrate of lead continues slow and easy at from £36 10s. to £37 per ton.

Acids and Tar Products

A fair inquiry has been reported for tartaric acid at about 1s. 3½d. per lb. Relatively few sales of citric acid have been made and down to 1s. 10½d. per lb. has been quoted this week. Acetic acid is steady though in quiet demand at about £36 10s. per ton for the 80 per cent. commercial product and £67 for the glacial. Oxalic acid continues to be quoted at up to 3½d. per lb.

In the absence of any improvement in the demand for the product pitch is on the easy side at about £2 17s. 6d. per ton. Creosote oil is in moderate request and fairly steady at 6½d. per gallon. Carbolic acid has been about maintained at 6½d. per lb. for crystal and 2s. 2d. per gallon for crude, but business in both cases is of limited extent. Solvent naphtha is steady and in fair demand at about 7s. 2d. per gallon.

Gas Company's New Laboratories

The Inaugural Luncheon

SIR DAVID MILNE-WATSON, governing director of the Gas Light and Coke Co., presided at an inaugural luncheon held at Horseferry Road on Thursday, July 26, in connection with the opening of the new research laboratories of the company, which were opened by Sir Richard Threlfall, chairman of the Fuel Research Board. The laboratories were fully described in last week's issue of THE CHEMICAL AGE, which also gave photographs of them.

Sir David Milne-Watson said they were lunching on the site of the first gas works erected in 1812; though they had given up the manufacture of gas on the premises it was still stored there in large quantities. They had many interesting problems to work out at the new laboratories; there were many questions still concerning high temperature carbonisation, though there were also new ideas concerned with low temperature carbonisation, and in the new laboratories they intended to form a focus for the company's work. They were fitted with the latest appliances, and owing to their position in the laboratory, workers could keep in touch with the actual working conditions of gas manufacture. A low temperature carbonisation plant had been erected at Richmond, designed by the Fuel Research Board, and at Fulham a low temperature retort had been erected for the study of the suitability of the plant for dealing with various English coals.

Sir Richard Threlfall, in the course of an address, referred to the difficulty experienced by the Fuel Research Board at an early date in finding properly equipped young men to carry on the investigations, and said the parents of this country must be assured that science as a profession was worth following from the financial point of view before their sons and daughters would be allowed to embrace a scientific career. He feared that this would mean that, for one or two generations at all events, the scientific posts would have to be overpaid. At the moment he would say that beginners were overpaid and seniors underpaid.

After the luncheon the party motored to Fulham, where Sir Richard Threlfall declared the new buildings open.

Non-Inflammable Film Co. Annual Meeting

THE first annual general meeting of the Non-Inflammable Film Co., Ltd., was held in London on Friday, July 27, Sir Herbert E. Blain, chairman, presiding. The chairman said that he hoped the shareholders would agree that there were probably few manufacturing companies which at the end of their first year were able to present so strong a financial position. A works had been purchased at Lancaster. They had received three successive offers from artificial silk groups to acquire this works and a portion of their rights, and after careful deliberation the offer of the Cellulose Acetate Silk Co., Ltd., was accepted, having regard to the fact that this offer in addition to a cash consideration of £150,000, also retained for their company an extensive holding of 250,000 deferred shares in an industry capable of very wide expansion. The board then turned their attention to the safety glass industry, and, in conjunction with John M. Newton and Sons, Ltd., formed the Newtex Safety Glass Co., Ltd. The company had, in the course of their various developments, developed or provided for the equivalent of three factories, and now had a fourth large one in hand.

Seconding the resolution for the adoption of the report, Dr. H. Levinstein said it was generally recognised that the manufacture of the company's film required three separate and distinct processes. The manufacture of cellulose acetate was a purely chemical one. The manufacture of film base depended for success on the design of the machines and the skill with which they were used. The conversion of the base into sensitised film was a photographic industry, and was quite different from the others. Cellulose acetate was made at their Rickmansworth factory and would in future be made by the Cellulose Acetate Co., Ltd., when the Lancaster factory was equipped. A factory was to be erected at Waddon, near Croydon, where film base would be made, and it was hoped that in the near future the photographic side of the business would also be concentrated at Waddon.

The resolution was carried unanimously and the proceedings subsequently closed.

Company News

"SENTINEL" WAGGON WORKS.—Interim dividend on preference shares at the rate of $7\frac{1}{2}$ per cent. per annum for six months ended June 30.

W. AND H. M. GOULDING.—Profits for the year ended June 30 were £33,064, and £3,698 was brought forward. A dividend of 5 per cent. is proposed on the ordinary shares, adding £6,000 to the depreciation fund, and carrying forward £3,637.

JURGENS.—A dividend for the half year ended June 30, 1928, on (guaranteed) 7 per cent. cumulative participating preference shares at the rate of 7 per cent. per annum will be paid on August 1, under deduction of income tax at the rate of 4s. in the £, to all persons registered as holders of shares at close of business on July 16.

BROKEN HILL PROPRIETARY CO.—Net profit for the year ending May 31, 1928, £222,616, after providing £284,058 for ordinary depreciation, £35,000 for special depreciation, and £98,952 for debenture interest. For 1926-27, net profit was £291,576, after allowing £318,978 for depreciation and providing for debenture interest.

AGUAS BLANCAS NITRATE (1928).—The total number of shares allotted is 1,500,007, of which 150,000 are allotted as fully paid to holders of debentures of Aguas Blancas Nitrate Co., Ltd. (in liquidation), and 1,350,000 are allotted as paid up otherwise than in cash to extent of 3s. per share in pursuance of an agreement for reconstruction dated April 25, 1928, between liquidating company and its liquidator of the one part and this company of other part, adopting and carrying into effect a scheme of reconstruction approved by the debenture-holders, and upon each of remaining seven shares 5s. has been paid in cash. Receipts and payments on capital account to date of report are as follow:—Receipts, £33,751 15s. Payments, £33,751 15s. Preliminary expenses, inclusive of capital duty and stamp duties, are estimated at £3,000.

Carbonisation of "Kinneil Gas" Coal

THE Survey Papers of the Fuel Research Division of the Department of Scientific and Industrial Research form a series of special papers and reports on matters connected with the physical and chemical survey of the coals of Great Britain. The latest is entitled *The Coalfields of Scotland*. The Carbonisation of "Kinneil Gas" Coal (H.M. Stationery Office, pp. 36, 1s. 6d.). This report gives the results of tests on the carbonisation, at high temperatures, of a typical Scottish gas coal in continuous vertical and in horizontal retorts. In the former the coal worked easily and the yields compare favourably with those obtained from other gas coals tested at the Research Station. The horizontal setting, consisting of eight retorts, is new, and is described for the first time in this report. The results obtained in these retorts using "Kinneil Gas" coal were very satisfactory. The report also gives the results of the low-temperature carbonisation of the coal and of tests to determine the suitability of the various cokes for steam-raising in the Lancashire boiler and for fuel-gas production in three types of gas plant.

I.C.I. Offer to Welsbach Light Co.

At the ordinary general meeting in London on Tuesday of the Welsbach Light Co., Ltd., Mr. J. R. Yates, the chairman, said the main point in the accounts was that the profits for the year were insufficient to pay the proposed diminished dividend of $2\frac{1}{2}$ per cent. For some years past some of them had realised that in combination and in that alone was salvation to be found for the gas lighting trade, and efforts had from time to time been made to realise that idea. They were now making a step forward in conjunction with no less a concern than Imperial Chemical Industries, Ltd. That company already held a preponderating interest in Lighting Trades, Ltd. and J. and W. B. Smith—companies engaged in trade similar to their own. Shareholders had already forwarded assents representing over 67 per cent. (out of the required 76 per cent.) of the total issued share capital, and they were still freely coming in. Those who had not sent assents were recommended to lose no time in doing so.

The report was unanimously adopted.

New Chemical Trade Marks

Applications for Registration

This list has been specially compiled for us from official sources by Gee and Co., Patent and Trade Mark Agents, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks, and Designs.

Opposition to the Registration of the following Trade Marks can be lodged up to August 18, 1928.

NEMURAL.

492,299. Class 3. Chemical substances prepared for use in medicine and pharmacy. Bayer Products, Ltd., 31 to 34, Basinghall Street, London, E.C.2; merchants and manufacturers.—June 12, 1928.

BETAN.

488,290. Class 1. Chemical substances for use in softening or increasing the permeability of textile fabrics and leather in the process of dyeing and cleaning. Deutsche Hydrierwerke Aktiengesellschaft (a Joint Stock Company organised under the laws of the Republic of Germany), 163, Kantstrasse, Berlin-Charlottenburg, Prussia, Germany; chemical manufacturers.—February 7, 1928. (By Consent.)

HOMOZONE.

490,863. Class 1. A chemical preparation for producing oxygen gas by the addition of water. Kenneth Samuel Culloch Bone, "Rosslyn," 17, Long Lane, Garston, Liverpool; analytical chemist.—April 27, 1928.

Opposition to the Registration of the following Trade Marks can be lodged up to August 25, 1928.

SERESOL.

491,128. Class 1. Paints, varnishes, enamels, colours distempers, japans, lacquers, driers, wood preservatives, wood stains, anti-corrosive and anti-fouling compositions and anti-corrosive oils. Pinchin, Johnson and Co. Ltd., General Buildings, Aldwych, London, W.C.2, varnish, colour and paint manufacturers. May 5, 1928.

CORROID.

491,573. Class 1. Black varnishes and anti-corrosive preparations. E. Hardman, Son and Co., Ltd., Bedford Street, Wilmington, Kingston-upon-Hull, tar distillers. May 18, 1928.

STIG B.

Registration of this Trade Mark shall give no right to the exclusive use of the letter "B."

487,163. Class 1. Paints, paint driers, enamels, lacquers and varnishes. Pierre Bertin, 89, Rue de Longchamps, Neuilly-sur-Seine (Seine), France, manufacturers. December 30, 1927.

NURA.

489,962. Class 1. Paints. Arthur Jones, 9, Alcester Road, South, King's Heath, Birmingham, glass, lead, oil and colour merchant. March 29, 1928.

LYN-O-MAS.

491,984. Class 1. Paints, varnishes, enamels, colours, distempers, japans, lacquers, driers, wood preservatives, wood stains, anti-corrosive and anti-fouling compositions and anti-corrosive oils. Joseph Mason and Co., Ltd., Nottingham Road, Derby, varnish, japan and colour manufacturers. June 1, 1928.

Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal" have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

STABILISED CHLORIDE OF LIME.—The Egyptian Department of Public Health is inviting tenders, to be presented in Cairo by October 2, 1928, for the supply of 20 tons of stabilised chloride of lime. (Reference No. BX. 4615.)

For cars, motor boats and electrical risks

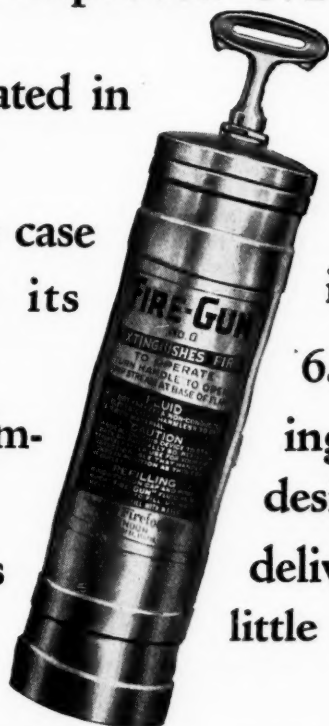
An improved C.T.C. Extinguisher.

1. It can be operated in any position.

2. Denting of the case does not affect its efficiency.

3. Leaking is eliminated.

4. The nozzle is protected.



5. No solder, which tends to cause corrosion, is used internally.

6. The double-acting pump is of special design to ensure quick delivery of fluid with little effort.

The "Fire-Gun" is designed for the combating of those fires which are so likely to occur on cars and motor boats or around electrical equipment. The special liquid used is a non-conductor of electricity.

If you have not yet seen the "Fire-Gun," one will be sent free for inspection and test.

Should the appliance not be retained, the cost of the return carriage will be sent upon application.

The "Fire-Gun" is approved by the Fire Offices' Committee, the Board of Trade and the Metropolitan Police. Foamite Firefoam, Limited, 55-57, Gt. Marlborough St., London, W.1.

Foamite Fire Protection

A Complete Engineering Service

Against Fire

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

County Court Judgments

[NOTE.—The publication of extracts from the "Registry of County Court Judgments" does not imply inability to pay on the part of the persons named. Many of the judgments may have been settled between the parties or paid. Registered judgments are not necessarily for debts. They may be for damages or otherwise, and the result of bona-fide contested actions. But the Registry makes no distinction of the cases. Judgments are not returned to the Registry if satisfied in the Court books within twenty-one days. When a debtor has made arrangements with his creditors we do not report subsequent County Court judgments against him.]

DOWNS, Mr. H. E. (trading as H. F. EDWARDS AND CO.), 5, South Grove, Tottenham, benzine merchant. (C.C., 4/8/28.) £12 16s. 7d. June 6.

GRIEVE AND GORDON, LTD., Tudor Works, Abbey Road, Park Royal, oil distillers. (C.C., 4/8/28.) £18. June 26.

TRAVIS, S. H. AND CO., 35, Kings Road, St. Pancras, manufacturing chemists. (C.C., 4/8/28.) £12 15s. 11d. June 22.

Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case, the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.]

SMITHSON AND GLEDHILL, LTD., Ravensthorpe, dyers and finishers. (M., 4/8/28.) Registered July 20, transfer of mortgage and further charge (supplemental to mortgage dated August 28, 1922), to Bank, charged on Branch Mills, Ravensthorpe with moveable plant, etc. *£7,500. February 8, 1928.

VICTORIA OIL AND REFINING CO., LTD., Strood. (M., 4/8/28.) Registered July 20, £7,000 mortgage, to H. J. Peers, c/o Cannon Brookes and Odgers, Norfolk House, Norfolk Street, W.C.; charged on Victoria Oil Refinery, Strood; also registered July 20, £7,000 debenture (as additional security) to said H. J. Peers; general charge. *£7,000. December 29, 1927.

Satisfactions

HAMILTON OIL CONCESSIONS (ROUMANIA), LTD., London, E.C. (M.S., 4/8/28.) Satisfaction registered July 19, £10,000 registered December 23, 1926 (leaving outstanding the interest due in respect thereof).

VICTORIA OIL AND REFINING CO., LTD., Strood. (M.S., 4/8/28.) Satisfactions registered July 20, £5,000 registered November 2, 1927, and £8,200 registered February 28, 1928.

London Gazette, &c.

Companies Winding Up Voluntarily

CALLENDER'S (EGYPT), LTD. (C.W.U.V., 4/8/28.) By reason of its liabilities, July 20. H. Gardiner, 40 and 41, Old Broad Street, London, E.C.2, appointed as liquidator. Meeting of the creditors at liquidator's office, on Wednesday, August 8, at 2.30 p.m., creditors' claims by September 26.

ARNOLD (G.) AND CO., LTD. (C.W.U.V., 4/8/28.) By reason of its liabilities, July 26th. Colonel Dudley Lewis, Kennan's House, Crown Court, Cheapside, E.C.2, appointed as liquidator. Meeting of creditors at Kennan's House, Crown Court, Cheapside, E.C.2, on Wednesday, August 15, at 2.30 p.m.

Receiverships

BARTLEY AND SMITH, LTD. (formerly CELLONOID, LTD.) (R., 4/8/28.) H. Button, of Africa House, Kingsway, W.C. and L. Wilson, 4, Commercial Street, Halifax, C.A.'s were appointed joint Receivers and Managers on July 16, under powers contained in debenture dated February 1928.

ARNOLD (G.) AND CO., LTD. (R., 4/8/28.) H. Carter, of 6 and 7, Queen Street, E.C.2, was appointed Receiver and Manager on July 12, under powers contained in debenture dated June 28, 1928.

New Companies Registered

DUFFIELD COAL PRODUCTS, LTD.—Registered as a "public" company on 28 July. Nom. capital, £300,000 in 150,000 7 per cent. non-cumulative participating preference shares of £1 each and 3,000,000 ordinary shares of 1s. each. Objects:—To adopt three agreements: (1) and (2) with Lindley Duffield and Co., Ltd., and (3) with J. S. Harrison, to acquire and turn to account inventions for improvements in or relating to the production of gas and crude oil and other products from coal, slack, peat, refuse or other minerals or carbonaceous or other substances, and to trade in any manner in regard to the manufactures, appliances, products, components, metals, chemicals, ingredients, materials, fluids, gases, oils, preparations, apparatus, spare parts and articles comprised in or covered by any processes, specifications or inventions in which the company is the owner or is interested. Directors: F. L. Duffield, Georgian House, Bury Street, St. James's, London, S.W. (permanent), and other to be appointed by the subscribers.

J.A.T., LTD.—Private company. Registered July 28. Nom. capital, £1,000 in £1 shares. Objects:—To carry on the business of bankers, capitalists, financiers, concessionaires and merchants; to acquire inventions or secret processes relating to the production of activated carbon, ammonia or compounds of ammonia, acetone cyanides, cyanamide nitrates or any other products from peat, coal or coke, etc. Subscribers: E. L. Davies, 1a, Herbert Road, Plumstead Common, S.E.18; E. J. Burrows, 29, Lyndhurst Road, Highams Park, E.4.

KEY PAINT CO., LTD. Private company. Registered July 30. Capital, £5,000 in £1 shares. Objects: To carry on the business of manufacturers of and dealers in paints, enamels, varnishes, white and colour washes, colours, distempers, creosotes, cellulose and other chemical products, etc. The directors are: P. E. G. Heffer, 17, Addison Avenue, W.10, merchant (chairman); Agnes M. N. Heffer, S.4 T. L. Greer and W. H. Greer.

MARB-L-COTE MANUFACTURING GREAT BRITAIN, LTD.—Private company. Registered July 26. Capital, £5,000 in 2,500 10 per cent. cumulative preference shares of £1 each and 50,000 ordinary shares of 1s. each. Objects: To carry on the business of manufacturers of and dealers in plastic and other paints and products, and chemical, industrial and other preparations and articles and compounds, cements, oils, varnishes and other similar products, boxes, and cases of all kinds, etc. Subscribers: H. Crutchfield, "Woodleigh," Coombe Lane, Kingston Hill; R. Gillan, 43, Halsey Street, S.W.3.

"MULTICOLOURS," LTD.—Private company. Registered July 26. Nom. capital, £1,500 in £1 shares. Objects: To carry on the business of manufacturers of lake pigment and other pigment colours, sellers of chemicals, dyestuffs, compounds, paints, varnishes, drugs, dyewares and cleaners, dyers, bleachers, colourers, renovators, cleaners and disinfectors of articles of apparel and fabrics, etc. Directors: H. E. W. Johnson, 12, Johnson's Court, Fleet Street, E.C.4; L. K. Kelly, Bollinhurst, Disley, Ches.

NORTH OF IRELAND "L. & N." CO., LTD.—Registered as a public company on July 26. Nom. capital, £250,000 in £1 shares. Objects: To acquire mineral bearing properties in Northern Ireland or elsewhere, and to mine, work and deal with the mineral or other deposits therein, etc. A subscriber: Sir John Pakeman, 11, Ironmonger Lane, E.C.2.

The Boys' Ballot

A SALOON motor car and 350 other prizes to the value of £1,500 are still waiting to be won in the fascinating sports and pastimes competition which is being organised in aid of the John Benn Hostel for East End working boys at Stepney. All you have to do is to place a list of sports and pastimes in what you consider will prove to be their popular order, and to give your own particular favourite. Tickets for the Ballot are 1s. each, 10s. for a book of 11. Send at once for tickets and complete prize lists to: The Ballot Organiser, c/o Sir Ernest Benn, Bouverie House, Fleet Street, E.C.4.

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